

Drawing Index

SHEET NO.	SHEET NAME	DESCRIPTION
1	T1	COVER SHEET
2	G1	EROSION & SEDIMENT CONTROL NOTES AND DETAILS
3	G2	GENERAL NOTES AND DETAILS
4	G3	TREE PROTECTION NOTES
5	D1	MISCELLANEOUS DETAILS
6	D2	SIGN SHEET
7	C1	SITE PLAN
8	C2	SITE PLAN
9	C3	SITE PLAN
10	S1	STRUCTURAL NOTES
11	S2	PLAN - BRIDGE LAYOUT
12	S3	PARTIAL FRAMING PLAN
13	S4	SECTIONS AND DETAILS
14	S5	SECTIONS AND DETAILS
15	S6	FRAMING DETAILS

BEFORE YOU DIG CALL
"MISS UTILITY"
OF VIRGINIA
AT 811

NOTES:

- THIS PROPERTY IS LOCATED WITHIN THE CITY OF NORFOLK CBPA DESIGNATED INTENSELY DEVELOPED AREA (IDA).
- FOR ALL SITES 1 ACRE OR GREATER, OR GREATER THAN 2,500 SQUARE FEET IN THE CBPA, CONTACT THE VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION AT (804) 786-3957 TO OBTAIN A VSMP CONSTRUCTION PERMIT.
- LAND DISTURBANCE AREA = 1.57 ACRES

LEGEND

EXISTING SYMBOL	ABBREV.	DESCRIPTION	PROPOSED SYMBOL
	BOLL	BOLLARD (WOOD)	
	C&G	CURB & GUTTER	
	CALC.	CALCULATED DATA	
	CATV	UNDERGROUND CABLE TELEVISION	
	CL	CENTERLINE	
	CONC.	CONCRETE	
	CIP	CULVERT INLET PROTECTION (CIP)	
	DATR	DIGITIZED ACCORDING TO RECORDS	
	UE	UNDERGROUND ELECTRIC LINE	
	EOI	END OF INFORMATION	
	EG	EDGE OF GRAVEL	
	EP	EDGE OF PAVEMENT	
	FENCE	FENCE	
	ELEC.	ELECTRIC	
	EX.	EXISTING	
	ESP	EXISTING SPOT ELEVATION	
	FH	FIRE HYDRANT	
	GAS	UNDERGROUND GAS LINE	
	GM	GAS METER	
	GMH	GAS MANHOLE	
	GV	GAS VALVE	
	GP	GUY POLE	
	GUY	GUY WIRE ANCHOR	
	LP	LIGHT POLE	
	OHE	OVERHEAD ELECTRIC	
	OHT	OVERHEAD TELEPHONE	
	OHC	OVERHEAD CABLE	
	OHU	COMBINATION OVERHEAD UTILITY LINES	
	PL	PROPERTY LINE	
	PLAT	PLAT DATA	
	PP	POWER POLE	
	R/W	RIGHT-OF-WAY	
	SS	SANITARY SEWER LINE	
	SSCO	SANITARY CLEAN OUT	
	SD	STORM DRAIN PIPE	
	SDMH	STORM DRAIN MANHOLE	
	SFM	SANITARY FORCE MAIN	
	SFMV	SANITARY FORCE MAIN VALVE	
	SIGN	SIGN	
	SSMH	SANITARY SEWER MANHOLE	
	TC	TOP OF CURB	
	TELE	TELEPHONE	
	TP	TELEPHONE POLE	
	TBM	TEMPORARY BENCH MARK	
	TSP	TRAFFIC SIGNAL POLE	
	UP	UTILITY POLE	
	VAULT	VAULT	
	EW	WATER LINE	
	WM	WATER METER	
	WV	WATER VALVE	
	ERW	RAW WATER LINE	
	SILT	SILT FENCE	
	SILT	SOIL STABILIZATION BLANKETS & MATTING	
	TRAIL	TRAIL	
	TP	TREE PROTECTION	
	TP	TREE OR SHRUB	



City of
Norfolk

Department of Public Works

ELIZABETH RIVER TRAIL - PHASE IIIA

VDOT PROJECT NO. EN00-122-138, C506

(UPC 97727)

FHWA 534 DATA # (4J028)

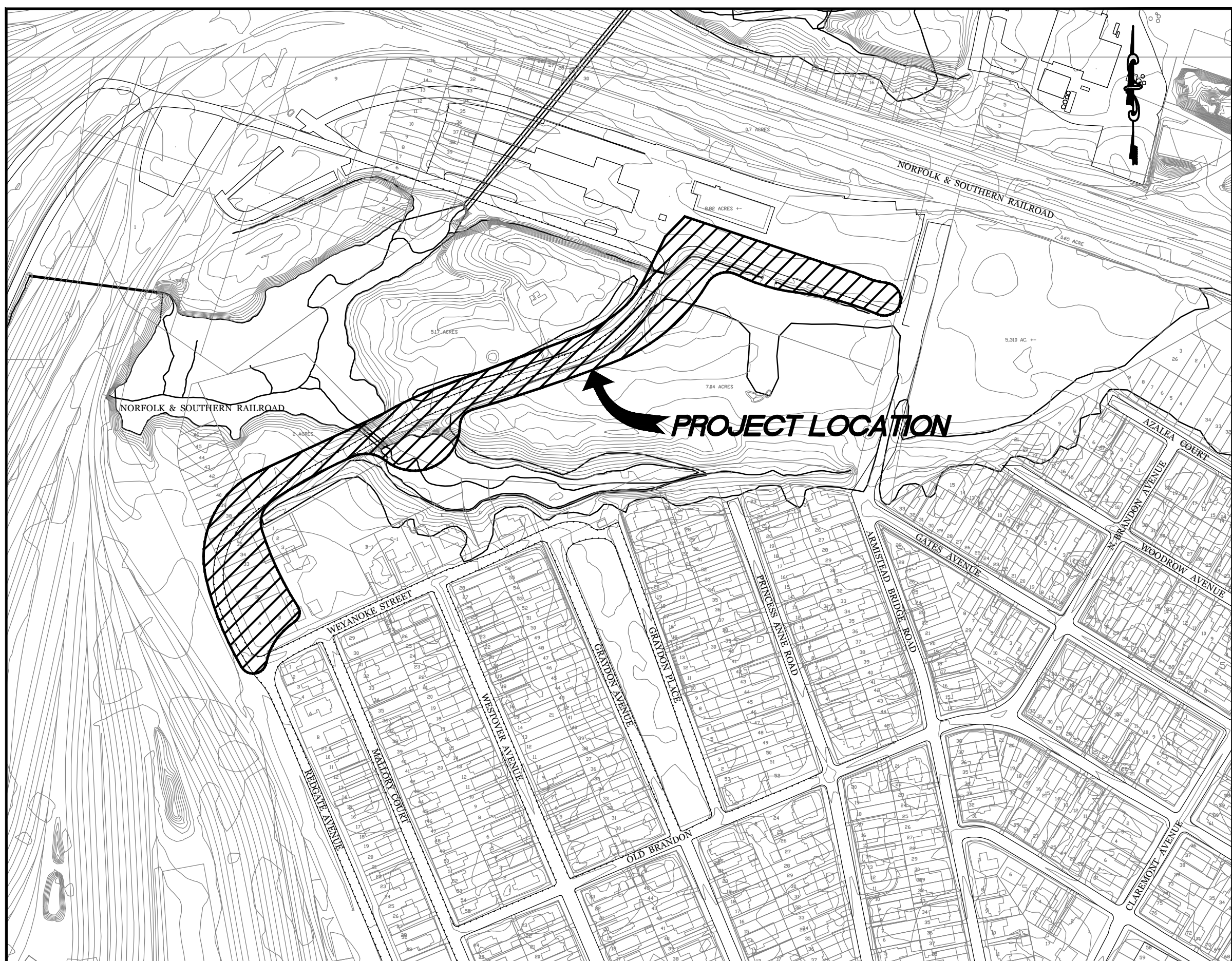
CONSTRUCTION TYPE CODE: (Y052)

FHWA AID # PE PHASE: TEA-5122 (148)

(UPC 56430)

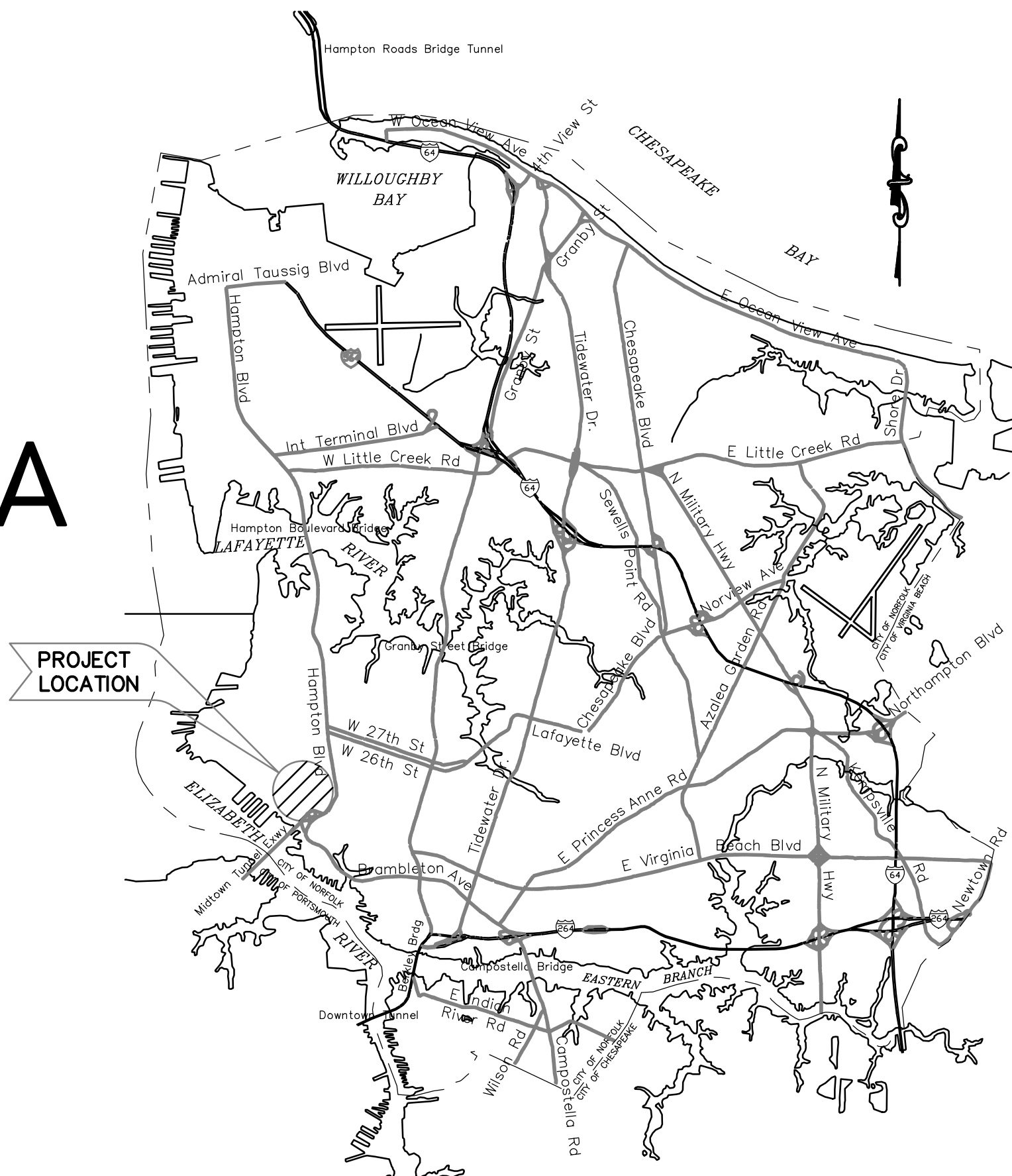
FHWA AID # CN PHASE: TEA-5A03 (508)

DECEMBER 2, 2013



PROJECT LOCATION MAP

SCALE: 1" = 200'



VICINITY MAP

NO SCALE



REFER TO PROJECT SPECIFICATIONS FOR STANDARDS AND SPECIFICATIONS UNDER WHICH THE PROJECT IS TO BE CONSTRUCTED.

THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE VIRGINIA DEPARTMENT OF TRANSPORTATION'S 2007 ROAD AND BRIDGE SPECIFICATIONS, 2008 ROAD AND BRIDGE STANDARDS, 2011 WORK AREA PROTECTION MANUAL, AND AS AMENDED BY CONTRACT PROVISIONS AND THE COMPLETE PLAN ASSEMBLY.

SURVEY NOTE:

ELEVATIONS AS SHOWN HEREON ARE BASED ON NAVD 88. TOPOGRAPHIC SURVEY PERFORMED BY CITY OF NORFOLK, NOVEMBER 2006.

DATE	SHEETS REVISED	INITIALS
CITY ENGINEER	DATE:	
DEPARTMENT OF PLANNING	DATE:	
URS	URS Corporation 277 Bendix Road, Suite 500 Virginia Beach, VA 23452 (757) 499-4224	T1

1. PROJECT DESCRIPTION: THIS IS THE THIRD PHASE OF THE ELIZABETH RIVER TRAIL. IT WILL PROVIDE A MULTI-USE PATH CONNECTING THE EXISTING PATH ALONG THE WEST EDGE OF REDGATE AVENUE TO THE EXISTING PATH THROUGH JEFF ROBERTSON PARK IN ORDER TO PROVIDE PEDESTRIAN AND BICYCLE ACCESS.

2. EXISTING SITE CONDITIONS AND ADJACENT AREAS: THE PROJECT AREA STARTS WITH AN ASPHALT PATH ADJACENT TO AN EXISTING ROADWAY, THEN CROSSES A WETLANDS AREA WITH A WOODEN BRIDGE, AND CONTINUES THROUGH A BIRD SANCTUARY WITH A GRAVEL PATH.

3. OFF SITE AREAS: NO OFF-SITE AREAS WILL BE DISTURBED. THE CONTRACTOR WILL IDENTIFY THE STAGING AREAS PRIOR TO LAND DISTURBING ACTIVITY AND WILL PROVIDE PERIMETER SILT FENCE, CONSTRUCTION ENTRANCE AND ADDITIONAL EROSION AND SEDIMENT CONTROL.

4. SOILS AND CRITICAL AREAS: SOIL CONSISTS OF SANDY CLAY TO FINE CLAYEY SAND. GROUNDWATER IS AT A DEPTH OF APPROXIMATELY 5 FEET BELOW GRADE.

5. **EROSION AND SEDIMENT CONTROL MEASURES:** PRIOR TO LAND DISTURBING ACTIVITIES ALL EROSION CONTROL DEVICES SHALL BE INSTALLED, MAINTAINED, AND REMOVED IN ACCORDANCE WITH THE 1992 EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND SECTION 1.5 OF THE E&S REGULATIONS OF THE VIRGINIA DIVISION OF SOIL AND WATER CONSERVATION (VR 625-02-000).

6. PERMANENT STABILIZATION: ALL DISTURBED AREAS WILL BE TOPSOILED AND SEEDED.

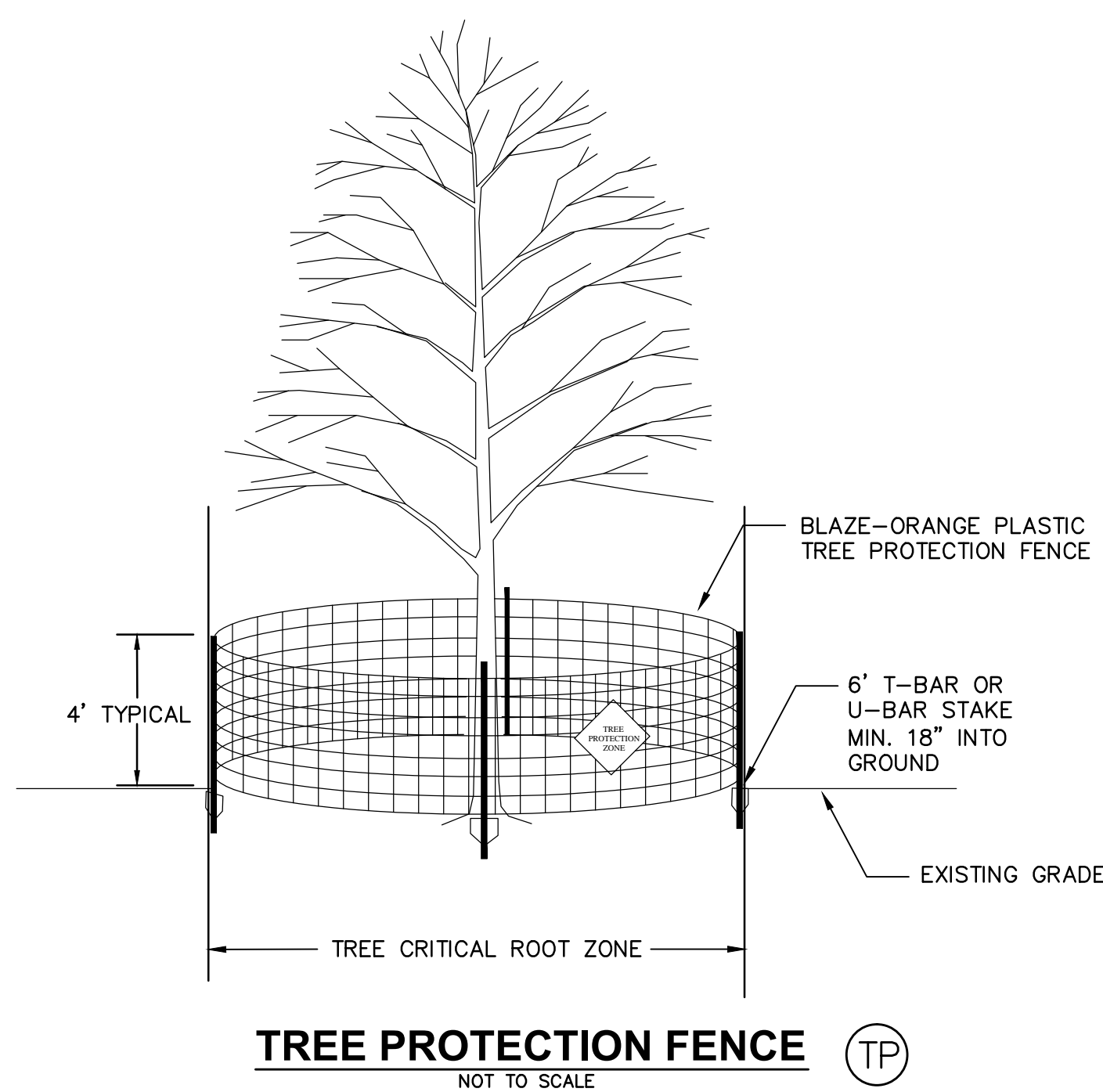
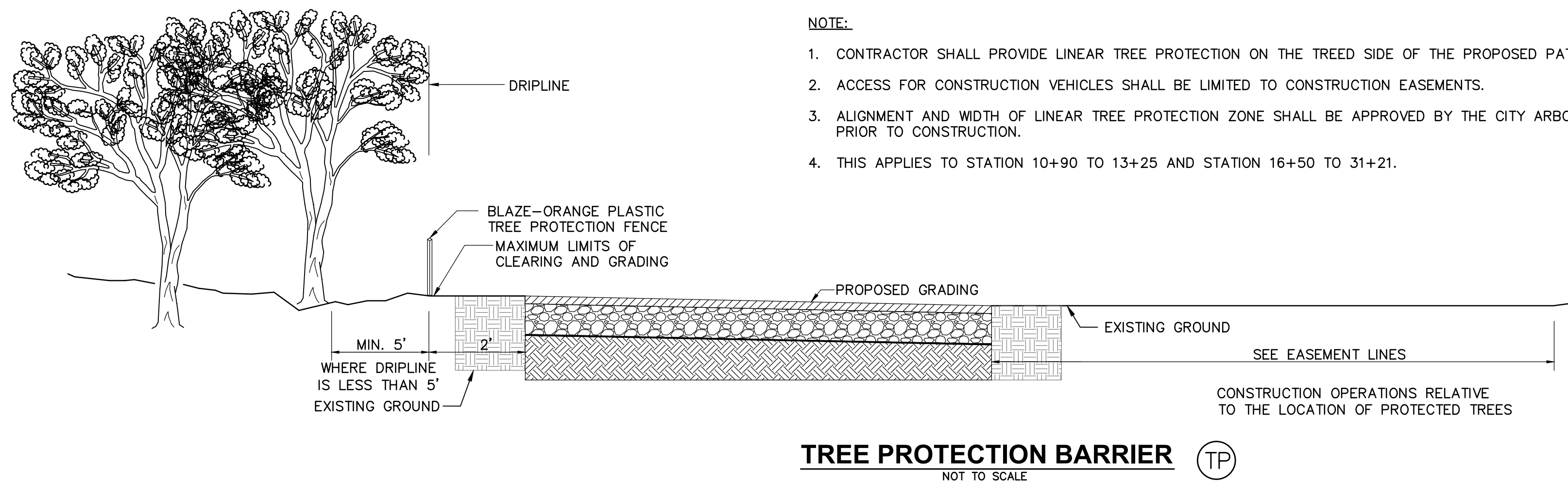
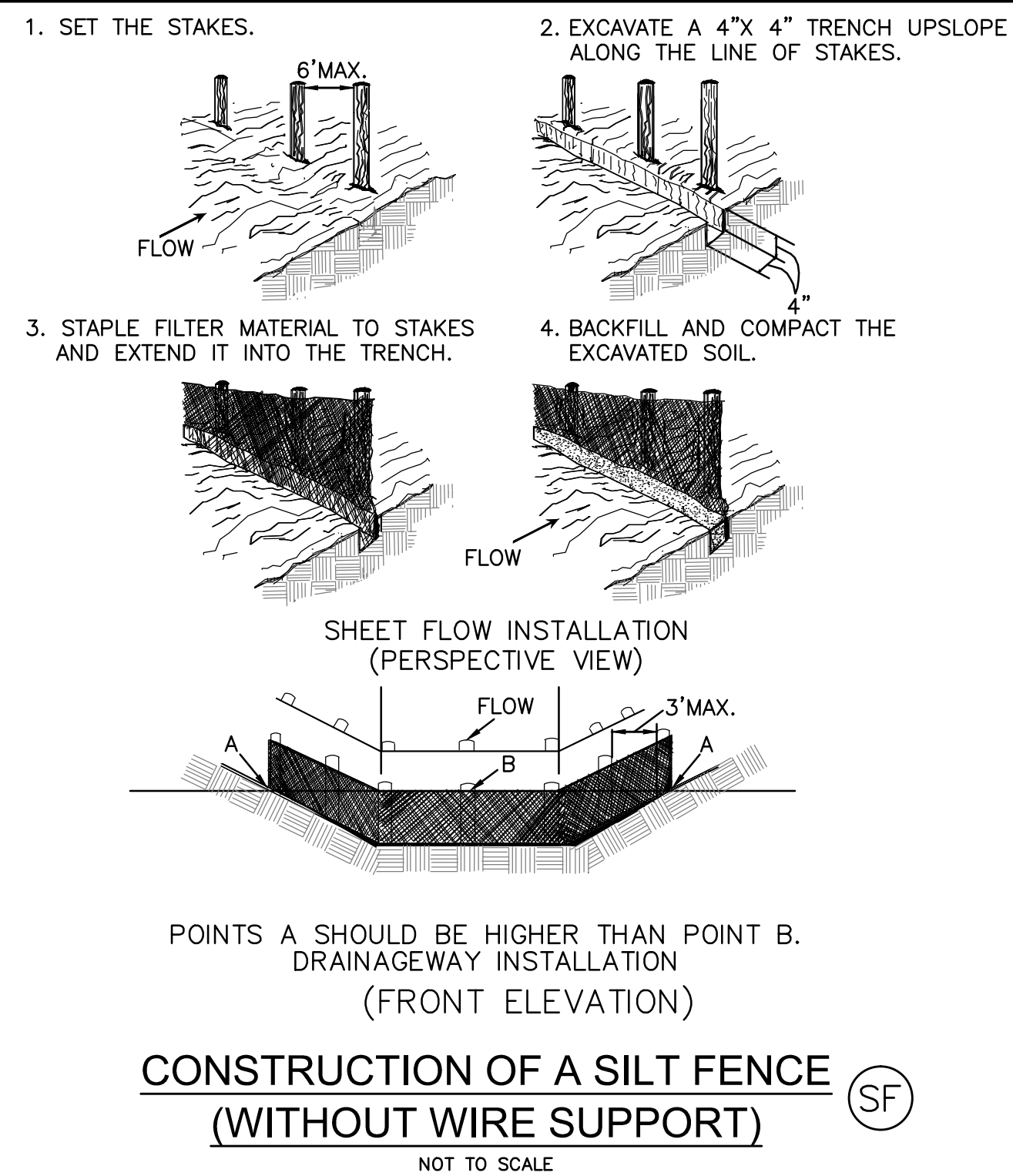
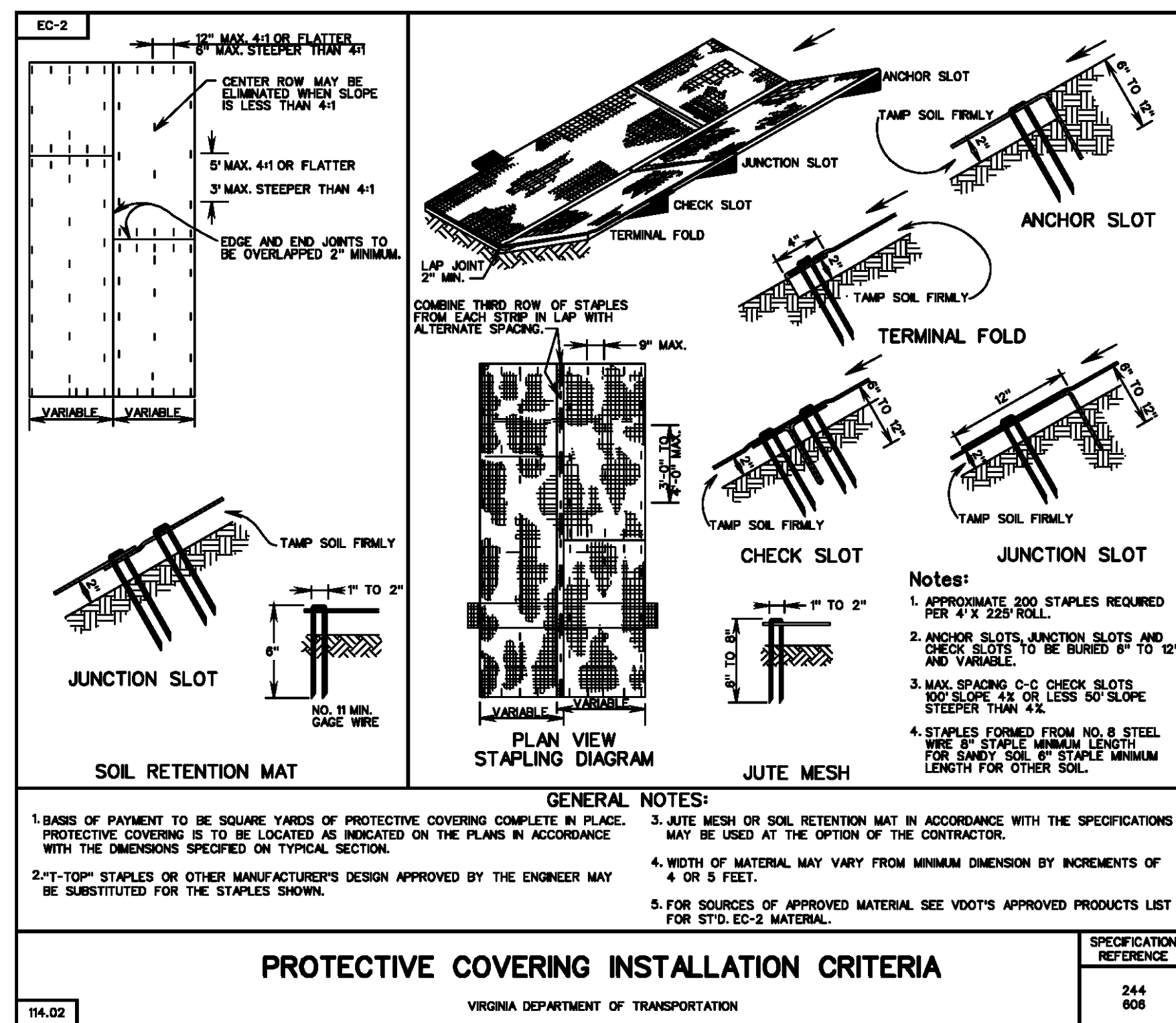
7. STORMWATER RUN-OFF CONSIDERATIONS AND CALCULATIONS: THE PROJECT WILL RESULT IN AN INCREASE OF 18,295 SF OR 0.42 ACRES OF IMPERVIOUS AREA.

8. LAND DISTURBANCE: THE AMOUNT OF LAND DISTURBANCE FOR THIS PROJECT IS APPROXIMATELY 68,380 SF OR 1.57 ACRES.

IN GENERAL, ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED AFTER EACH RAINFALL OR WEEKLY, WHICHEVER IS MOST FREQUENT, AND SHOULD BE CLEANED AND REPAIRED ACCORDING TO THE FOLLOWING SCHEDULE:

1. EROSION AND SEDIMENT CONTROL WILL BE CHECKED REGULARLY FOR UNDERMINING OR DETERIORATION AND BUILDUP OR CLOGGING WITH SEDIMENT. CORRECTIVE ACTION WILL BE TAKEN IMMEDIATELY.
2. ALL SEEDED AREAS WILL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED AND RESEED AS NEEDED.
3. ALL TEMPORARY EROSION AND SEDIMENT MEASURES SHALL BE DISPOSED OF WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED AND VEGETATION IS ESTABLISHED.

1. UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (3RD EDITION, 1992) AND THE CITY OF NORFOLK EROSION AND SEDIMENT CONTROL ORDINANCE.
2. THE CONTRACTOR SHALL CONTACT THE CITY OF NORFOLK, BUREAU OF ENVIRONMENTAL SERVICES (664-4368) AT LEAST 48 HOURS PRIOR TO ANY LAND DISTURBING ACTIVITY (INCLUDING DEMOLITION) SO THAT A PRECONSTRUCTION CONFERENCE CAN BE SCHEDULED.
3. THE CONTRACTOR SHALL APPLY PERMANENT OR TEMPORARY SOIL STABILIZATION TO ALL DENUDED OR DISTURBED AREAS WITHIN 7 DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. SOIL STABILIZATION MUST ALSO BE APPLIED TO DENUDED OR DISTURBED AREAS WHICH MAY NOT BE AT FINAL GRADE BUT WHICH WILL REMAIN UNDISTURBED FOR LONGER THAN 30 DAYS. SOIL STABILIZATION MEASURES INCLUDE VEGETATIVE ESTABLISHMENT, MULCHING AND THE EARLY APPLICATION OF GRAVEL BASE MATERIAL ON AREAS TO BE PAVED.
4. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CONSTRUCTION.
5. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES AND CLEANUP OF SEDIMENTATION ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE MADE IMMEDIATELY.
6. THE CONTRACTOR SHALL LIMIT SITE ACCESS BY CONSTRUCTION VEHICLES TO ENTRANCES PROTECTED BY A STONE CONSTRUCTION ENTRANCE (VESCH STD. & SPEC. 3.02) OR AN APPROVED COMPARABLE CONTROL MEASURE. SEDIMENT SHALL BE REMOVED FROM PAVED AREAS ON A DAILY BASIS.
7. STOCK PILES OF SOIL AND OTHER ERODIBLE MATERIALS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION FOR STOCKPILES OFF SITE AS WELL AS FOR MATERIALS TRANSPORTED FROM THE PROJECT SITE.
8. THE CONTRACTOR SHALL MONITOR AND TAKE PRECAUTIONS TO CONTROL DUST INCLUDING (BUT NOT LIMITED TO) USE OF WATER, MULCH, OR CHEMICAL DUST ADHESIVES AND CONTROL OF CONSTRUCTION SITE TRAFFIC.
9. EFFLUENT FROM DE-WATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND CHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT ADJACENT PROPERTIES, WETLANDS, WATERWAYS OR THE STORM DRAINAGE SYSTEM.
10. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF ANY ADDITIONAL CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED NECESSARY BY THE PLAN APPROVING AUTHORITY.
11. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ARE NOT TO BE REMOVED UNTIL ALL DISTURBED AREAS ARE STABILIZED. AFTER STABILIZATION IS COMPLETE, ALL MEASURES SHALL BE REMOVED WITHIN 30 DAYS. TRAPPED SEDIMENT SHALL BE SPREAD AND SEEDED.



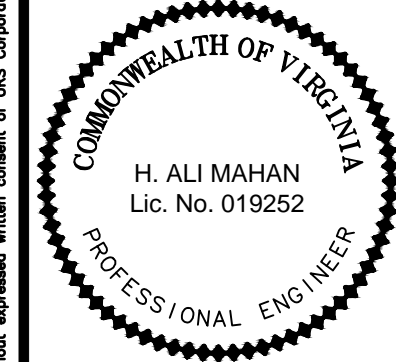
- NOTE:
1. CONTRACTOR SHALL PROVIDE LINEAR TREE PROTECTION ON THE TREED SIDE OF THE PROPOSED PATH.
 2. ACCESS FOR CONSTRUCTION VEHICLES SHALL BE LIMITED TO CONSTRUCTION EASEMENTS.
 3. ALIGNMENT AND WIDTH OF LINEAR TREE PROTECTION ZONE SHALL BE APPROVED BY THE CITY ARBORIST PRIOR TO CONSTRUCTION.
 4. THIS APPLIES TO STATION 10+90 TO 13+25 AND STATION 16+50 TO 31+21.

THE FOLLOWING PERSON, ALI MAHAN, _____ (SIGN), IS IDENTIFIED
AS THE RESPONSIBLE LAND DISTURBER WHO WILL BE IN CHARGE OF AND RESPONSIBLE FOR
CARRYING OUT THE LAND DISTURBING ACTIVITY.
THIS PERSON MEETS THE APPLICABLE REQUIREMENTS OF VIRGINIA CODE SECTION 10.1-563 AND
10.1-566 BY VIRTUE OF THE FOLLOWING (CHECK THE CATEGORY THAT APPLIES

_____	RESPONSIBLE LAND DISTURBER CERTIFICATE	
_____	DCR CERTIFICATION FOR COMBINED ADMINISTRATOR, LAND REVIEWER, INSPECTOR, OR CONTRACTOR.	ADMINISTRATOR
_____	VA PROFESSIONAL ENGINEER, LAND SURVEYOR, LANDSCAPE ARCHITECT, OR ARCHITECT	

UPON AWARD OF THE CONTRACT AND BEFORE ANY LAND DISTURBING ACTIVITY CAN BEGIN. THE CONTRACTOR SHALL BE DESIGNATED AS THE "PERMITEE OF RECORD AND SHALL EXECUTE THE CERTIFICATE FOR RESPONSIBLE LAND DISTURBER WITH THE DEPARTMENT OF CITY PLANNING, ENVIRONMENTAL SERVICES. THIS EXECUTED FORM IS TO BE SUBMITTED TO THE DEPARTMENT OF UTILITIES AND THE DEPARTMENT OF PLANNING. AWARD OF CONTRACT WILL RELIEVE THE ABOVE SIGNER OF ALL RESPONSIBILITY."

OFFICE REVIEW SUMMARY		
PROJECT MANAGER:	SMB	
<input type="checkbox"/> 35%	<input type="checkbox"/> 60%	<input checked="" type="checkbox"/> 100%
PROJECT Q/A C:	SMB	
<input type="checkbox"/> 35%	<input type="checkbox"/> 60%	<input checked="" type="checkbox"/> 100%
PROJECT ENGINEER:	SMB	
<input type="checkbox"/> 35%	<input type="checkbox"/> 60%	<input checked="" type="checkbox"/> 100%
DRAFTSMAN:	WDS	
DRAFTSMAN:		



URS

277 BENDIX ROAD
SUITE 500
VIRTUE BEACH, VIRGINIA
(757) 499-4224
WWW.URSCORP.COM

CITY OF NORFOLK - DEPARTMENT OF PUBLIC WORKS
ELIZABETH RIVER TRAIL - PHASE IIIA
EROSION & SEDIMENT CONTROL
NOTES AND DETAILS
NORFOLK, VIRGINIA

CITY OF CHICAGO LIBRARY SERVICES DEPT. OF PUBLIC WORKS COMMUNITY ENGAGEMENT DIVISION	
PROJECT REVISIONS	DATE
REVISED PER CITY COMMENTS DATED MARCH 2013	10/24/2013
REVISED PER CITY COMMENTS DATED DECEMBER 2013	12/2/2013

ISSUE DATE:
DECEMBER 2, 2012

SHEET
G1
SHEET 2 OF 15

UNLESS OTHERWISE SPECIFIED, ALL CONSTRUCTION METHODS AND MATERIAL SHALL CONFORM TO THE CURRENT SPECIFICATIONS AND STANDARDS OF THE DEPARTMENTS OF PUBLIC WORKS AND PUBLIC UTILITIES, CITY OF NORFOLK, VIRGINIA, AND ANY OTHER APPLICABLE CITY ORDINANCE AND CODE.

PRIOR TO CONSTRUCTION OR EXCAVATION, THE CONTRACTOR SHALL ASSUME THE RESPONSIBILITY OF LOCATING ANY UNDERGROUND UTILITIES (PUBLIC OR PRIVATE) THAT MAY EXIST AND CROSS THROUGH THE AREA OF CONSTRUCTION THAT ARE NOT SHOWN ON THESE PLANS. BEFORE YOU DIG, TO MISS THE UTILITIES, CALL "MISS UTILITY" OF VIRGINIA AT 1-800-552-7001. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING AT HIS EXPENSE ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING WITH MATCHING MATERIALS ANY PAVEMENT, DRIVEWAYS, WALKS, CURBS, ETC., THAT MUST BE CUT OR THAT ARE DAMAGED DURING CONSTRUCTION.

ELEVATIONS AS SHOWN HEREON ARE BASED ON NAVD 88. TOPOGRAPHIC SURVEY PERFORMED BY CITY OF NORFOLK, NOVEMBER 2006.

THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN, THROUGHOUT THE JOB, ALL EROSION AND SILTATION CONTROL WORK, AS SHOWN ON THE CONTRACT DRAWINGS. ALL CONTROL METHODS AND DETAILS SHALL COMPLY WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (LATEST EDITION). SEE PLANS FOR LOCATIONS.

INGRESS AND EGRESS NECESSARY FOR CONSTRUCTION TRAFFIC IN THE PROJECT AREA SHALL BE LOCATED OUTSIDE OF THE CRITICAL ROOT ZONE OF TREES, WHERE POSSIBLE. THE CONTRACTOR SHALL INSTALL A MULCH CONSTRUCTION MAT AT ALL LOCATIONS WHERE INGRESS AND EGRESS TRAVERSES BENEATH THE CRITICAL ROOT ZONE OF TREES TO REMAIN. ALL MULCH CONSTRUCTION MATS MUST BE INSTALLED AT THE SITE DRAINAGE AND REMOVED BY THE CONTRACTOR USING A STEEL-TIRED BACK-HOE OR SKID LOADER AT PROTECTION COMPLETION. ALL DISTURBED AREAS INCLUDING DEPRESSIONS CREATED BY CONSTRUCTION EQUIPMENT SHALL BE BROUGHT TO ORIGINAL GRADE WITH APPROVED TOPSOIL, AND SEEDED (EXCEPT FOR AUDUBON AREA) WITH REBEL TALL FESCUE.

THIS PROPERTY IS LOCATED WITHIN A CITY OF NORFOLK CBPA DESIGNATED INTENSELY DEVELOPED AREA (IDA).

ALL VEGETATION, WOODY, OR OTHERWISE, EXCEPT LAWN, ORNAMENTAL GRASS AND FLOWERS LESS THAN TWENTY-FOUR (24) INCHES IN HEIGHT WITHIN THE 100' CBPA BUFFER REQUIRES A PERMIT FOR REMOVAL, ALTERATION, OR WORK WITHIN THE CRITICAL ROOT ZONE FROM BUREAU OF ENVIRONMENTAL SERVICES (684-4751) WITH SUBSEQUENT MITIGATION REQUIREMENTS.

LAYDOWN/MATERIAL STORAGE AREA TO BE DETERMINED BY CONTRACTOR. ALL STOCKPILES SHALL HAVE A PERIMETER SILT FENCE.

SPECIAL REQUIREMENTS FOR WORK IN TREE DRIP LINE

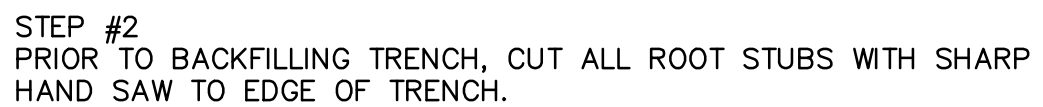
TRAIL CONSTRUCTION WITHIN THE DRIP LINE OF TREES IS TO BE DONE WITH HAND TOOLS ONLY. I.E. PLATE COMPACTORS, WHEEL BARRELS, HAND GRADING. NO MOTOR VEHICULAR TRAFFIC OR HEAVY CONSTRUCTION EQUIPMENT WILL BE ALLOWED UNDER TREE DRIP LINE. NO PRUNING OF BRANCHES, WHETHER INTENTIONALLY OR ACCIDENTALLY, WILL BE ALLOWED. TREE PROTECTION SHALL BE INSTALLED PRIOR OR ANY SITE DISTURBANCES AND REMAIN IN PLACE FOR THE DURATION OF THE PROJECT. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL DAMAGE (APPRAISED VALUE LOSS OR RESTORATIVE TREATMENT) TO EXISTING TREES.

FOR PURPOSE OF ENABLING THE CITY TO ASSESS THE EXTENT OF ROOT DAMAGE AND ACCOMPANYING LOSS OF STRUCTURAL INTEGRITY FOLLOWING ROOT PRUNING, ALL ROOT PRUNE TRENCHES MUST BE INSPECTED BY THE CITY FORESTER, PRIOR TO BACKFILLING. ROOT PRUNING SHALL BE SCHEDULED MONDAY-FRIDAY BETWEEN 8:00a.m. AND 5:00p.m. TO THE ORIGINAL DEPTH TO PERMIT THE REQUIRED INSPECTION. ANY AND ALL COST ASSOCIATED WITH REOPENING OF THE TRENCH SHALL BE RESPONSIBILITY OF THE CONTRACTOR. OPEN TRENCH ROOT INSPECTIONS MUST BE SCHEDULED MONDAY-FRIDAY BETWEEN 8:00a.m. AND 5:00p.m. THERE WILL BE NO OPEN TRENCH INSPECTIONS MADE ON WEEKENDS, OR CITY OWNED AND MAINTAINED PARKS. OPEN TRENCH INSPECTIONS SHOULD BE SCHEDULED BY CALLING THE DIVISION OF OS PARKS AND URBAN FORESTRY AT 823-4023.

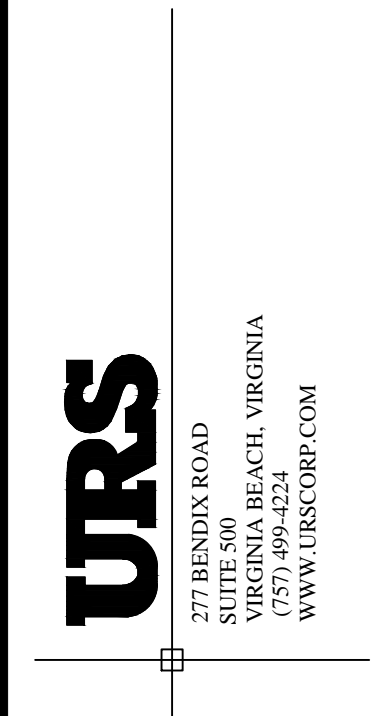
1. FOR TREE PRESERVATION TECHNIQUES REFER TO THE CITY OF NORFOLK ARBORICULTURAL SPECIFICATIONS AND STANDARDS OF PRACTICE MANUAL.
2. PRIOR TO COMMENCING WITH ANY EXCAVATION WITHIN THE LIMITS OF WORK THE ENGINEER, CONTRACTOR, AND EQUIPMENT OPERATOR SHALL MEET WITH THE CITY FORESTER ON SITE, TO REVIEW THE PROPOSED CONSTRUCTION WORK, ASSESS THE IMPACT TO EXISTING TREES, AND DELINEATE ROOT PRUNE AREAS. THERE SHALL BE NO CONSTRUCTION WORK OR SITE MOBILIZATION PERFORMED AT ANY LOCATION WHERE CONSTRUCTION IMPACTS TO TREES HAVE NOT BEEN JOINTLY REVIEWED ON-SITE BY THE PROJECT ENGINEER, CONTRACTOR, RELEVANT SUBCONTRACTORS, EQUIPMENT OPERATORS, AND THE CITY FORESTER.
3. PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION, PROTECTION BARRIERS SHALL BE PLACED AROUND ALL TREES TO BE RETAINED ON THE SITE PLAN TO PREVENT THE DESTRUCTION OR DAMAGING OF TREES. THESE WILL BE LOCATED IN A CIRCULAR PATTERN WITH A RADIUS EQUAL TO THE LENGTH OF THE WIDEST OR LONGEST BRANCH. MATERIAL WILL NOT BE STOCKPILED WITHIN THIS DEFINED AREA AND VEHICLES AND OTHER EQUIPMENT ARE TO BE EXCLUDED TO AVOID SOIL COMPACTION. THE ONLY EXCEPTION TO THIS REQUIREMENT WILL BE THOSE SPECIFICALLY ALLOWED BY THESE STANDARDS AND SPECIFICATIONS.
4. BOARDS OR WIRES OF A NON-PROTECTIVE NATURE WILL NOT BE NAILED OR ATTACHED TO TREES DURING BUILDING OPERATIONS.
5. HEAVY EQUIPMENT OPERATORS WILL BE CAUTIONED TO AVOID DAMAGE TO EXISTING TREE TRUNKS AND ROOTS DURING LAND LEVELING OPERATIONS. FEEDER ROOTS SHOULD NOT BE CUT IN AN AREA EQUAL TO TWICE THE TREE CIRCUMFERENCE (MEASURED 4-1/2 FEET ABOVE GROUND LINE IN INCHES) EXPRESSED IN FEET. (EXAMPLE: CIRCUMFERENCE OF TEN INCHES WOULD HAVE A "NO CUT" ZONE OF TWENTY FEET IN ALL DIRECTIONS FROM THE TREE.) THESE UTILITY LOCATIONS AND ELEMENTS OF IMPACT SHOULD BE KNOWN PRIOR TO CONSTRUCTION.
6. TREE TRUNKS AND EXPOSED ROOTS DAMAGED DURING EQUIPMENT OPERATION WILL BE TREATED IMMEDIATELY IN ACCORDANCE WITH THE ARBORICULTURAL SPECIFICATIONS. CARE FOR SERIOUS INJURY SHOULD BE PRESCRIBED BY THE CITY ARBORIST.
7. ALL TREE LIMBS DAMAGED DURING BUILDING OR LAND LEVELING OR REMOVED FOR ANY OTHER REASON WILL BE PRUNED BY A CERTIFIED ARBORIST IN ACCORDANCE WITH THE NATURAL "TARGET" PRUNING AS SHOWN IN THE ARBOR CULTURAL MANUAL.
8. IF PROTECTED TREES ARE KILLED DURING THE CONSTRUCTION PERIOD, THEY MUST BE REPLACED BY TREES WITH AN EQUITABLE APPRAISED VALUE OF NURSERY STOCK 2-2 1/2" DBH (DIAMETER BREST HEIGHT) SPECS, QUANTITIES AND PLANTING LOCATIONS TO BE DETERMINED BY THE CITY FORESTER.
9. TEMPORARY TREE PROTECTION FENCING SHALL BE INSTALLED, INSPECTED AND APPROVED BY THE BUREAU OF PARKS AND FORESTRY PRIOR TO ANY SITE DISTURBANCE.
10. A COPY OF THE TREE WORK PERMIT ISSUED TO PUBLIC WORKS WILL BE PROVIDED TO THE CONTRACTOR AUTHORIZING WORK SHOWN ON PLANS. ANY ADDITIONAL WORK WITHIN THE DRIP LINE OF TREES LOCATED ON CITY PROPERTY OR WITHIN THE 100' RPA BUFFER NOT SHOWN ON THE PLANS, WILL REQUIRE A SEPARATE REVIEW BY PARKS AND FORESTRY AND SEPARATE TREE PERMIT.
11. ALL EXCAVATION WITHIN THE DRIP LINE OF TREES SHALL BE CUT BY HAND ONLY. ALL FILL APPLIED WITHIN THE DRIP LINE SHALL BE UNLOADED BY WHEELBARROW AND GRADED BY HAND.
12. STORAGE OF CONSTRUCTION MATERIALS, SOIL, CONSTRUCTION EQUIPMENT, ETC., BENEATH THE DRIP LINE OF TREES ON SITE, IS STRICTLY PROHIBITED.
13. WHERE APPROVED EXCAVATIONS WITHIN THE DRIP LINE SEVER ROOTS GREATER THAN 4" IN DIAMETER, THE CONTRACTOR SHALL NOTIFY THE BUREAU OF PARKS AND FORESTRY WITHIN 24 HOURS OF EXCAVATION TO IN ORDER TO ACCESS THE DEGREE OF ROOT DAMAGE.

ALL ACCESS AND CONSTRUCTION SHALL BE WITHIN THE EASEMENTS SHOWN OR WITHIN CITY RIGHT-OF-WAY.

TABLE 3.31-B (Revised June 2003) TEMPORARY SEEDING SPECIFICATIONS QUICK REFERENCE FOR ALL REGIONS		
SEED		
APPLICATION DATES	SPECIES	APPLICATION RATES
Sept. 1 - Feb. 15	50/80 Mix of Annual Ryegrass (oilium multi-florum) & Cereal (Winter) Ryegrass (Secale cereale)	50 - 100 (lb/acre)
Feb. 16 - Apr. 30	Annual Ryegrass (oilium multi-florum)	80 - 100 (lb/acre)
May 1 - Aug. 31	German Millet	50 (lb/acre)
FERTILIZER & LIME		
• Apply 10-10-10 fertilizer at a rate of 450 lbs. / acre (or 30 lb. / 1,000 sq. ft.) • Apply Pulverized Agricultural Limestone at a rate of 2 tons/acre (or 30 lb. / 1,000 sq. ft.)		
NOTE: 1 - A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site. 2 - Incorporate the lime and fertilizer into the top 4 - 6 inches of the soil by disking or by other means. 3 - When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control Technical Bulletin #4, 2003 Nutrient Management for Development Sites at http://www.dcr.state.va.us/watersheds/html/pubs		



OFFICE REVIEW SUMMARY	
PROJECT MANAGER:	SMB <input type="checkbox"/> 35% <input type="checkbox"/> 60% <input type="checkbox"/> 90% <input checked="" type="checkbox"/> 100%
PROJECT Q/A Q.C.:	SMB <input type="checkbox"/> 35% <input type="checkbox"/> 60% <input type="checkbox"/> 90% <input checked="" type="checkbox"/> 100%
PROJECT ENGINEER:	SMB <input type="checkbox"/> 35% <input type="checkbox"/> 60% <input type="checkbox"/> 90% <input checked="" type="checkbox"/> 100%
DRAFTSMAN:	WDS



CITY OF NORFOLK - DEPARTMENT OF PUBLIC WORKS
ELIZABETH RIVER TRAIL - PHASE IIIA

GENERAL NOTES AND DETAILS

NORFOLK, VIRGINIA

PROJECT REVISIONS		DATE
REVISED PER CITY COMMENTS DATED MARCH 2013		10/24/2013
REVISED PER CITY COMMENTS DATED DECEMBER 2013		12/2/2013

ISSUE DATE:
DECEMBER 2, 2012

SHEET
G2

SHEET 3 OF 15

FILE NAME: U:\11655363 - Norfolk Parks\11655840 - Elizabeth River Trails\11655840 - Phase 3A\Cad\11655840_C500DET.dwg LAYOUT NAME: G3 PLOTTED: Thursday, December 12, 2013 - 4:56pm

CITY OF NORFOLK - TREE PROTECTION NOTES

1. PROTECTED TREE:

WITH EXCEPTION OF THOSE TREES SPECIFICALLY SHOWN TO BE REMOVED, ALL EXISTING TREES ON PUBLIC AND PRIVATE PROPERTY SHALL BE ACTIVELY PRESERVED AND PROTECTED BY THE CONTRACTOR, AND ANY SUBCONTRACTORS, FROM DAMAGE TO THE CROWN AREA, TRUNK, ROOT SYSTEM, OR ROOTING ENVIRONMENT (SOIL SYSTEM) DURING CONSTRUCTION.

2. CRITICAL ROOT ZONE:

GENERAL: THE CRITICAL ROOT ZONE (CRZ) IS DEFINED AS THE SURFACE AREA OF THE GROUND DIRECTLY BENEATH THE LIMITS OF THE CROWN (BRANCH) SPREAD OF A TREE. THE CRZ IS ALSO COMMONLY REFERRED TO AS THE DRIPLINE. (SEE TREE PROTECTION FENCING DETAIL). IT IS WITHIN THIS ZONE THAT THE MAJORITY OF LARGER ROOTS THAT PROVIDE SUPPORT FOR THE TREE, AND TRANSPORT WATER AND NUTRIENTS, EXIST. A RELATIVELY HIGH PERCENTAGE OF ABSORPTIVE ROOTS ALSO TYPICALLY OCCUR WITHIN THE CRZ. IN URBAN AREAS ROOTING DEPTHS WITHIN THE CRZ RARELY OCCUR BELOW 30 INCHES, WITH MOST ROOTS FOUND WITHIN THE UPPER 18 INCHES OF THE SOIL PROFILE. PAVED STREET SURFACES (CURB FACE TO CURB FACE) ARE NOT INCLUDED IN THE CRZ.

CONSTRUCTION PROCEDURES: NO CONSTRUCTION VEHICLES, EQUIPMENT, MATERIALS, SUPPLIES, OR TEMPORARY FACILITIES (TRAILERS, PORTABLE TOILETS) MAY BE PLACED WITHIN THE CRZ (DRIPLINE) OF PROTECTED TREES; PAVED STREETS (CURB TO CURB) EXCEPTED. THE FOLLOWING TYPES OF ITEMS ARE RESTRICTED FROM THE CRZ: VEHICLES (CONSTRUCTION OR PERSONAL), CONSTRUCTION EQUIPMENT NOT SPECIFICALLY APPROVED AND INCIDENTAL TO THE WORK, CONCRETE WASHOUT, FUEL OR CHEMICAL STORAGE, TEMPORARY STOCKPILE OF SOIL, PIPING AND OTHER CONSTRUCTION MATERIALS AND SUPPLIES. PARKS & URBAN FORESTRY MAY GRANT EXEMPTIONS FOR WORK WITHIN THE CRZ WHERE SUITABLE TREE PROTECTION MEASURES ARE IMPLEMENTED, I.E. HAND DIGGING, INSTALLATION OF MULCH CONSTRUCTION MAT, ETC.

3. HAND DIG ZONE:

GENERAL: THE HAND DIG ZONE (HDZ) IS THE AREA OF THE ROOT SYSTEM THAT IS LIKELY TO CONTAIN THE MAJORITY OF SUPPORT AND TRANSPORT ROOTS 2 INCHES AND LARGER IN DIAMETER. HAND DIG ZONES VARY BASED ON TREE SIZE AND SPECIES CHARACTERISTICS, SOIL CONDITIONS, AND OTHER SITE FACTORS THAT AFFECT ROOTING PATTERNS.

CONSTRUCTION PROCEDURES: THE CITY FORESTER WILL DETERMINE THE EXTENT OF ALL HAND DIG ZONES WITHIN THE CRZ. ALL ROOTS 2 INCHES AND LARGER IN DIAMETER (ANY DIMENSION) ENCOUNTERED TO A 30" DEPTH IN THE HDZ, OUTSIDE THE ACTUAL SPACE OCCUPIED BY PIPES OR OTHER ELEMENTS BEING CONSTRUCTED, SHALL BE PRESERVED AND PROTECTED FROM ABRASIONS, CUTS OR OTHER SIGNIFICANT WOUNDS. EXCAVATION SHALL BE TUNNELED BENEATH THESE ROOTS. IT IS STRONGLY RECOMMENDED THAT AN AIR SPADE POWERED BY AN AIR COMPRESSOR (AIR-SPADE 150/90 MANUFACTURED BY CEG, INC. VERONA, PA, OR APPROVED EQUAL) BE UTILIZED TO EXPOSE PROTECTED ROOTS WITHOUT INJURY. PROTECTED ROOTS BRIDGING ANY OPEN EXCAVATION FOR MORE THAN 24 HOURS SHALL BE LOOSELY WRAPPED IN WET BURLAP TO PREVENT EXCESSIVE DEHYDRATION OF THE EXPOSED ROOT SURFACE. ROOTS LESS THAN 2 INCHES IN ANY DIMENSION MAY BE CUT, WHERE NECESSARY, WITH A SHARP AX. SHARPENED FLAT SPADE OR HAND PRUNING SAW AT THE EDGE OF THE EXCAVATION. ONCE EXCAVATION REACHES 30 INCHES, AND LARGER ROOTS DO NOT PROHIBIT ACCESS, MECHANICAL EQUIPMENT MAY BE USED TO DEEPEN THE EXCAVATION, AS NEEDED. IN AREAS WHERE ROOTS ARE ENCOUNTERED, WORK SHALL BE PERFORMED AND SCHEDULED TO CLOSE EXCAVATIONS AS QUICKLY AS POSSIBLE OVER EXPOSED ROOTS.

4. PRECONSTRUCTION FORESTRY REVIEW – LAYOUT OF SCOPE OF WORK, EXCAVATION, AND EQUIPMENT CLEARANCE PRUNING REVIEW:

A. GENERAL: CONSTRUCTION/EXCAVATION LAYOUT – IN ORDER TO ASSESS AND RESOLVE CONSTRUCTION IMPACTS TO EXISTING TREES, THE LOCATION OF ALL PROPOSED CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE JOINTLY REVIEWED AT THE PROJECT/CONSTRUCTION SITE BY THE CITY FORESTER, PROJECT ENGINEER AND CONTRACTOR, PRIOR TO ANY CONSTRUCTION.

CONSTRUCTION PROCEDURES: FOR THE PURPOSES OF IDENTIFYING AND RESOLVING ANY CONFLICTS WITH EXISTING TREES, PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL TOUR THE JOB SITE WITH THE PROJECT ENGINEER, AND CITY FORESTER TO ASSESS AND RESOLVE CONSTRUCTION IMPACTS TO EXISTING TREES. ALL CONSTRUCTION ACTIVITIES IN THE VICINITY OF EXISTING TREES SUCH AS SEWER AND WATER TAPS, SEWER CLEAN-OUT AND WATER METER BOX LOCATIONS, SEWER AND WATER PIPING ON PUBLIC AND PRIVATE PROPERTY, WATER VALVES, POINT REPAIRS, INSERTION AND RECEIVING PIT LOCATIONS, DEWATERING PIT LOCATIONS, UTILITY LOCATION PITS, REPAIRS TO OR INSTALLATION OF NEW STREET INFRASTRUCTURE (CURBS, VALLEY GUTTER, SIDEWALK, PAVING, ETC) AND PRUNING REQUIREMENTS FOR EQUIPMENT CLEARANCE SHALL BE IDENTIFIED AND MARKED IN THE FIELD PRIOR TO THE FORESTRY PRECONSTRUCTION REVIEW. WHERE IN THE SOLE OPINION OF THE CITY FORESTER, EXCAVATION WITH A TRENCHER, BACK-HOE, OR OTHER MECHANICAL EQUIPMENT FOR THE INSTALLATION OF SERVICE PIPING OR SEWER CLEAN-OUTS/WATER METER BOXES, CURB AND SIDEWALK, AND COMPLETION OF ANY OTHER REPAIRS OR IMPROVEMENTS WOULD LIKELY RESULT IN EXTENSIVE ROOT DAMAGE TO EXISTING TREES, HAND DIGGING AND/OR DESIGN MODIFICATIONS WILL BE REQUIRED. WHERE FEASIBLE, NEW SERVICE PIPING WILL BE PLACED IN A LOCATION THAT WILL LEAST IMPACT TREE ROOTS AND FACILITATE UTILITY INSTALLATION. THERE SHALL BE NO WORK PERFORMED AT ANY LOCATION WHERE THE SCOPE OF WORK HAS NOT BEEN JOINTLY REVIEWED BY THE PROJECT ENGINEER, CONTRACTOR, PLUMBER (WHERE APPLICABLE), AND CITY FORESTER, AND APPROVED.

B. TREE PRUNING – GENERAL: EXISTING TREE LIMBS INDICATED TO REMAIN MIGHT OBSTRUCT CONSTRUCTION OPERATIONS.

TREE PRUNING – CONSTRUCTION PROCEDURES: ALL CLEARANCE PRUNING REQUIREMENTS NOT SPECIFICALLY INDICATED ON THE PLANS SHALL REQUIRE THE ISSUANCE OF A SEPARATE TREE WORK PERMIT. EQUIPMENT CLEARANCE AND PRUNING REQUIREMENTS, INCLUDING ANY SPECIAL CONDITIONS, WILL BE DETERMINED DURING A REQUIRED PRECONSTRUCTION REVIEW BETWEEN THE CONTRACTOR, EQUIPMENT OPERATOR, PROJECT ENGINEER, AND CITY FORESTER.

5. ROOT PRUNE:

GENERAL: THE PURPOSE FOR ROOT PRUNING OF EXISTING TREES ADJACENT TO CONSTRUCTION IS TO PROVIDE A CLEANER, MORE CONTROLLED CUT THAN IS NORMALLY ACCOMPLISHED BY CONVENTIONAL EXCAVATING MACHINES. ROOT PRUNING ALSO PROVIDES AN OPPORTUNITY FOR A FORESTRY ASSESSMENT OF ROOT DAMAGE/LOSS, AND IMPACT OF ROOT PRUNING ON TREE HEALTH AND PUBLIC SAFETY.

CONSTRUCTION PROCEDURES: ROOT PRUNING, WHERE INDICATED, WITHIN THE CRITICAL ROOT ZONE MAY BE ACCOMPLISHED WITH A ROCK SAW, CHAIN SAW, HAND PRUNING SAW, SHARPENED TRENCHER OR VIBRATORY PLOW, OR A MACHINE SPECIFICALLY DESIGNED FOR ROOT PRUNING (I.E. DOSCO RC14SP ROOT PRUNER), AS REQUIRED TO RESULT IN A SMOOTH, FLAT TRUNCATION OF THE ROOT. WHERE A TRENCHER OR VIBRATOR PLOW IS UTILIZED, THE BLADE OR TEETH MUST BE SHARPENED PRIOR TO EACH PROJECT START. THE LOCATION OF THE CUT IS 6 INCHES OUTSIDE THE LIMITS OF THE EXCAVATION (TRENCH SIDE CLOSEST TOWARDS THE PROTECTED TREE) TO ENSURE THAT ALL ROOTS ENCOUNTERED IN THE TRENCH ARE PROPERLY SEVERED. LARGE ROOTS ENCOUNTERED THAT CANNOT BE SEVERED WITH ROOT PRUNING MACHINERY ARE TO BE HAND CUT WITH A SHARPENED PRUNING OR CHAIN SAW (SEE ROOT PRUNE MECHANICAL DETAIL). PRIOR TO ROOT PRUNING, THE CONTRACTOR SHALL LAYOUT IN THE FIELD THE ALIGNMENT OF THE CUT FOR APPROVAL BY A PARKS & URBAN FORESTRY INSPECTOR.

CITY OF NORFOLK - TREE PROTECTION NOTES (CONT.)

FOR THE PURPOSE OF ENABLING THE CITY TO ASSESS THE EXTENT OF ROOT DAMAGE AND ACCOMPANYING LOSS OF STRUCTURAL INTEGRITY FOLLOWING ROOT PRUNING, ALL ROOT PRUNE TRENCHES MUST BE INSPECTED, PRIOR TO BACKFILLING. ROOT PRUNING TRENCHES BACK-FILLED BEFORE INSPECTION WILL BE REQUIRED TO BE REOPENED TO THE ORIGINAL DEPTH TO PERMIT THE REQUIRED ROOT INSPECTION. ANY AND ALL COSTS ASSOCIATED WITH REOPENING OF THE TRENCH SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. OPEN TRENCH ROOT INSPECTIONS MUST BE SCHEDULED MONDAY-FRIDAY BETWEEN 8:00 A.M.–3:00 P.M. THERE WILL BE NO OPEN TRENCH ROOT INSPECTIONS MADE ON WEEKENDS, OR CITY OBSERVED HOLIDAYS. FORESTRY INSPECTIONS MAY BE SCHEDULED BY CALLING THE DIVISION OF PARKS & URBAN FORESTRY AT 823-4023.

6. EXCAVATION PROCEDURES WITHIN THE CRZ

GENERAL: PROTECTION OF TREES ADJACENT TO EXCAVATION INVOLVES THREE AREAS OF OPERATIONS: PLACEMENT OF EXCAVATED MATERIALS (DIRT, PIPE, ETC.) ROOT PRUNING/HAND DIGGING, AND PROTECTION OF TRUNK AND LIMBS.

CONSTRUCTION PROCEDURES: EXCAVATED MATERIAL PLANNED FOR BACKFILL USE MUST BE PLACED OUTSIDE OF THE CRITICAL ROOT ZONE OF ADJACENT TREES WHERE THERE IS SUFFICIENT ROOM. IF NO ROOM EXISTS DUE TO THE LOCATION OF ADJACENT STRUCTURES OR TREES AND THE FILL SOIL CANNOT BE PLACED ON A HARDSCAPE SURFACE, THE FILL SOIL MUST BE PLACED ON PLYWOOD OR OTHER SUITABLE DECKING TO CONTAIN THE FILL AND MINIMIZE POINT SOURCE SOIL COMPACTION WITHIN THE CRITICAL ROOT ZONE. ADDITIONALLY, WHERE IT IS NECESSARY TO OPERATE EQUIPMENT WITHIN THE CRITICAL ROOT ZONE (PAVED STREETS CURB FACE TO CURB FACE EXCEPTED), A SIX-INCH LAYER OF WOOD CHIPS SHALL BE PLACED AND MAINTAINED WITHIN THE CONSTRUCTION ACCESS-WAY TO MINIMIZE SOIL COMPACTION AND ROOT DAMAGE CAUSED BY THE EQUIPMENT. FOLLOWING CONSTRUCTION THE WOOD CHIPS MUST BE REMOVED WITH HAND TOOLS AND THE SITE RESTORED TO PREEXISTING CONDITIONS.

HAND DIGGING OR ROOT PRUNING WILL BE REQUIRED WHERE NOTED ON THE DRAWINGS OR OTHERWISE INDICATED DURING THE PRECONSTRUCTION FORESTRY REVIEW. (SEE HAND DIG ZONE, AND ROOT PRUNE FOR SPECIFIC PROCEDURES).

EXTREME CARE MUST BE TAKEN TO AVOID INJURY (SCARRING, BREAKAGE, ETC.) TO THE TRUNK AND CROWN AREA (BRANCHES) OF PROTECTED TREES. WHEREVER POSSIBLE, CONSTRUCTION EQUIPMENT SHALL BE MANEUVERED AS NEEDED TO AVOID UNNECESSARY PRUNING OR CONTACT WITH PROTECTED TREES. WHERE THERE IS A HIGH PROBABILITY OF EQUIPMENT CONTACT WITH THE TRUNK OF PROTECTED TREES, WOODEN ARMORING MAY BE REQUIRED TO BE INSTALLED ON PROTECTED TREES, AS SPECIFIED BY THE CITY FORESTER, PRIOR TO CONDUCTING ANY CONSTRUCTION ADJACENT TO PROTECTED TREES.

7. OPEN TRENCH FORESTRY INSPECTIONS:

ALL EXCAVATION WITHIN THE HAND DIG ZONE AS NOTED OR OTHERWISE DESIGNATED BY THE CITY FORESTER REQUIRE INSPECTION BY A NORFOLK PARKS & URBAN FORESTRY INSPECTOR PRIOR TO BACKFILLING. THE PURPOSE OF THE INSPECTION IS TO VERIFY THAT STRUCTURAL ROOTS 2" AND LARGER IN DIAMETER HAVE BEEN PROTECTED, AND TO ASSESS THE TREE FOR STRUCTURAL IMPACTS (WIND-THROW POTENTIAL). THE CITY FORESTER MAY ALSO REQUIRE INSPECTION OF CERTAIN AREAS APPROVED FOR EXCAVATION WITH MECHANICAL EQUIPMENT. IT IS NOT NECESSARY FOR ALL PIPING TO BE INSTALLED PRIOR TO THIS INSPECTION PROVIDED THAT EXCAVATION WITHIN THE AREA DESIGNATED FOR HAND DIGGING HAS BEEN DUG TO THE PROPOSED DEPTH OF PIPE, OR A MINIMUM 30-INCH DEPTH. SHOULD THE CONTRACTOR BACKFILL ANY OF THESE LOCATIONS PRIOR TO INSPECTION BY A PARKS & URBAN FORESTRY INSPECTOR, THE CITY FORESTER MAY REQUIRE THE CONTRACTOR TO REMOVE THE BACKFILL MATERIAL WITHIN THE HAND-DIG ZONE (OR MECHANICALLY EXCAVATED AREA REQUIRING FORESTRY INSPECTION), AT THE CONTRACTORS EXPENSE, AS NECESSARY TO COMPLETE THE INSPECTION. WHERE IN THE CITY FORESTER'S OPINION, NO IMMEDIATE HAZARD IS APPARENT, THE CONTRACTOR SHALL BE GIVEN A MAXIMUM PERIOD OF 72 HOURS TO REMOVE THE BACKFILL.

OPEN TRENCH FORESTRY INSPECTIONS WILL NOT BE COMPLETED ON WEEKENDS OR CITY-OBSERVED HOLIDAYS. THE CONTRACTOR MUST PROVIDE THE DIVISION OF PARKS & URBAN FORESTRY WITH A MINIMUM 24-HOUR WORKING DAY NOTICE FOR ALL OPEN TRENCH FORESTRY INSPECTIONS. OPEN TRENCH FORESTRY INSPECTIONS WILL BE CONDUCTED BETWEEN THE HOURS OF 9:00 A.M. – 3:00 P.M., MONDAY – FRIDAY, AND MAY BE SCHEDULED BY CALLING THE DIVISION OF PARKS & URBAN FORESTRY AT 823-4023 BETWEEN THE HOURS OF 7:00 A.M. – 4:00 P.M., MONDAY – FRIDAY.

8. TREE PRUNING:

A. PRECONSTRUCTION PRUNING:

PRECONSTRUCTION PRUNING – GENERAL: THE PURPOSE OF CLEARANCE PRUNING IS TO PROVIDE CONSTRUCTION EQUIPMENT ACCESS BENEATH AND ADJACENT TO THE CROWN (BRANCH AREA) OF PROTECTED TREES TO PREVENT UNNECESSARY BREAKAGE OR SCARRING OF LIMBS.

CLEARANCE PRUNING REQUIREMENTS WILL BE DETERMINED DURING THE PRECONSTRUCTION FORESTRY REVIEW (SEE NOTES, THIS SHEET).

PRECONSTRUCTION PRUNING – CONSTRUCTION PROCEDURES: ALL AUTHORIZED PRUNING WORK SHALL BE COMPLETED BY AN APPROVED, LICENSED, INSURED ARBORIST HOLDING CURRENT ARBORIST CERTIFICATION WITH THE INTERNATIONAL SOCIETY OF ARBORICULTURE. THE CONTRACTOR SHALL NOT PRUNE OR CAUSE TO HAVE PRUNED ANY TREE LOCATED ON CITY PROPERTY WITHOUT FIRST SECURING A SEPARATE TREE WORK PERMIT FROM THE DIVISION OF PARKS & URBAN FORESTRY. THE CONTRACTOR MUST SEEK AND RECEIVE PERMISSION FROM THE PROPERTY OWNER PRIOR TO PRUNING ANY TREE ON PRIVATE PROPERTY. ALL PRUNING WORK SHALL BE COMPLETED AT THE CONTRACTOR'S EXPENSE. THE CITY OF NORFOLK MAY ELECT, AT ITS OPTION, TO COMPLETE ANY EQUIPMENT CLEARANCE PRUNING ON PUBLIC STREET RIGHTS OF WAY.

B. SELECTIVE PRUNING OF CONSTRUCTION-DAMAGED TREES:

GENERAL: THE PURPOSE OF SELECTIVE PRUNING IS TO REMOVE BROKEN OR OTHERWISE WOUNDED BRANCHES FROM PROTECTED TREES THAT ARE DAMAGED THROUGH CONSTRUCTION RELATED ACTIVITIES. THE CITY FORESTER WILL DIRECT SELECTIVE PRUNING AND THERAPEUTIC REQUIREMENTS NEEDED TO RESTORE TREE HEALTH OR STRUCTURE. ALL WORK MUST BE COMPLETED BY A PROFESSIONAL, ISA CERTIFIED ARBORIST, AT THE CONTRACTOR'S EXPENSE.

CONSTRUCTION PROCEDURES: THE CITY FORESTER WILL ASSESS ALL CONSTRUCTION-DAMAGED TREES AND ORDER THE APPROPRIATE SELECTIVE PRUNING REQUIREMENTS. DAMAGES MAY ALSO BE ASSESSED TO THE CONTRACTOR FOR THE VALUE LOSS OF ANY PROTECTED TREE DAMAGED THROUGH CARELESS OR NEGLIGENT EQUIPMENT OPERATIONS, OR CONTRACTUAL VIOLATIONS INCLUDING NONCONFORMANCE TO CONTRACT TREE PROTECTION REQUIREMENTS DETAILED IN THE PROJECT SPECIFICATIONS OR DRAWINGS, OR OTHERWISE DIRECTED. TREES THAT ARE DAMAGED BEYOND REASONABLE AESTHETIC, STRUCTURAL OR PHYSIOLOGICAL RECOVERY WILL BE APPRAISED TO DETERMINE THE VALUE OF THE TREE, AND THE CONTRACTOR WILL BE HELD LIABLE FOR THE VALUE LOSS AND ANY ASSOCIATED REMOVAL OR SITE RESTORATION COSTS.

CITY OF NORFOLK - TREE PROTECTION NOTES (CONT.)

9. DAMAGE TO PROTECTED TREES:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO PROTECTED TREES RESULTING FROM NEGLIGENT OR CARELESS OPERATIONS, INCLUDING BUT NOT LIMITED TO LIMB BREAKAGE, TRUNK WOUNDS OR ABRASIONS, EXCESSIVE ROOT DAMAGE, SOIL COMPACTION, ETC. UPON SUCH OCCURRENCE THE CITY FORESTER WILL EVALUATE THE EXTENT OF DAMAGE AND DETERMINE THE APPROPRIATE REMEDIAL ACTION TO BE TAKEN AT THE CONTRACTOR'S EXPENSE, INCLUDING BUT NOT LIMITED TO CORRECTIVE PRUNING, BARK TRACING, CABLING AND BRACING, HAZARD EVALUATION, REMOVAL AND SOIL/SITE RESTORATION. IF IN THE SOLE OPINION OF THE CITY FORESTER, THE AMOUNT OF DAMAGE TO ANY CITY-OWNED TREE HAS RESULTED IN A SIGNIFICANT LOSS OF FUNCTIONAL, AESTHETIC, ARCHITECTURAL, OR ECONOMIC VALUE, THE CONTRACTOR WILL ALSO BE REQUIRED TO REIMBURSE THE CITY FOR THE FULL LOSS IN TREE VALUE.

VALUE LOSS WILL BE DETERMINED THROUGH AN APPRAISAL COMPLETED BY THE CITY FORESTER FOLLOWING ESTABLISHED PROCEDURES PUBLISHED IN THE "GUIDE FOR PLANT APPRAISAL", AUTHORED BY THE COUNCIL OF TREE AND LANDSCAPE APPRAISERS. IN THE EVENT OF ANY DISPUTE BETWEEN THE CONTRACTOR AND CITY OVER THE VALUE LOSS OF ANY TREE SO DAMAGED OR DESTROYED, THE CITY FORESTER WILL TAKE INTO CONSIDERATION AN INDEPENDENT TREE APPRAISAL COMPLETED BY AN EXPERIENCED CONSULTING ARBORIST HOLDING CURRENT CERTIFICATION IN GOOD STANDING AS A CERTIFIED ARBORIST, WITH THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA), IN ESTABLISHING THE ACTUAL VALUE LOSS. ALL COSTS ASSOCIATED WITH AN INDEPENDENT APPRAISAL SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

10. CONCRETE WASH OUT IN CRZ

THE DISPOSAL OF ANY CONCRETE RINSE WITHIN THE CRITICAL ROOT ZONE OF ANY TREE, OR ANY AREA WHERE THE RINSE COULD MOVE OR LEACH TO THE CRZ OF A PROTECTED TREE IS STRICTLY PROHIBITED

11. TREE PROTECTION FENCING:

GENERAL: THE PURPOSE OF TREE PROTECTION FENCING IS TO PREVENT UNAUTHORIZED ENCROACHMENT OF EQUIPMENT AND VEHICLES, OR STORAGE/TEMPORARY PLACEMENT OF CONSTRUCTION MATERIALS, SPOILS, OR DEBRIS WITHIN THE CRITICAL ROOT ZONE OF PROTECTED TREES.

CONSTRUCTION PROCEDURES: TREE PROTECTION FENCING SHALL BE BLAZE-ORANGE IN COLOR, HEAVY-DUTY PLASTIC MESH FENCE, 4 FEET TALL, SECURELY ATTACHED TO METAL 2" U-CHANNEL POST, SET A MAXIMUM OF 8' ON CENTER.

TREE PROTECTION FENCING SHALL BE INSTALLED PRIOR TO COMMENCING WITH ANY PROPOSED CONSTRUCTION ACTIVITY WITHIN 10 FEET OF ANY PROTECTED TREE, PAVED STREETS (CURB TO CURB) EXCEPTED. THE CITY FORESTER MAY WAIVE THE REQUIREMENT FOR TREE PROTECTION FENCING ADJACENT TO STREET TREES WHERE THE PLACEMENT OF SUCH WOULD ADVERSELY AFFECT TRAFFIC FLOW OR SAFETY, OR WHEN THE CONTRACTOR HAS CLEARLY DEMONSTRATED A CAPABILITY TO MANAGE CONSTRUCTION OPERATIONS ADJACENT TO STREET TREES WITHOUT UNDO RISK OF TREE DAMAGE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TREE PROTECTION FENCING ERECT AND IN GOOD REPAIR THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITIES FOR WHICH THE FENCING WAS REQUIRED.

12. TREE ORDINANCE AND TREE WORK PERMIT:

THE CONTRACTOR SHALL CONFORM TO ALL REQUIREMENTS OF THE CITY OF NORFOLK TREE ORDINANCE (CHAPTER 45, NORFOLK CITY CODE). A TREE WORK PERMIT AUTHORIZING THE COMPLETION OF WORK AS SHOWN OR DESCRIBED WILL BE ISSUED DIRECTLY TO THE CITY OF NORFOLK DEPARTMENT OF PUBLIC WORKS. THE CONTRACTOR WILL BE PROVIDED WITH A COPY OF THE TREE WORK PERMIT AT THE PRECONSTRUCTION MEETING. THE TREE WORK PERMIT MUST BE RETAINED ON THE JOB-SITE FOR THE DURATION OF THE PROJECT. ANY WORK NOT SPECIFICALLY SHOWN OR DESCRIBED INCLUDING BUT NOT LIMITED TO TREE PRUNING, TREE REMOVAL, OR ANY CHANGE ORDERS FOR WHICH A TREE WORK PERMIT WOULD BE REQUIRED IN ACCORDANCE WITH THE TREE ORDINANCE, WILL REQUIRE A SEPARATE TREE WORK PERMIT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SECURE ALL NECESSARY TREE WORK PERMITS PRIOR TO PROCEEDING WITH ANY ACTIVITY REGULATED BY THE TREE ORDINANCE.

OFFICE REVIEW SUMMARY:
PROJECT MANAGER: SMB
PROJECT O.A.Q.C.:
PROJECT ENGINEER: SMB
DRAFTSMAN: WDS

COMMONWEALTH OF VIRGINIA
H. ALI MAHAN
Lic. No. 019252
PROFESSIONAL ENGINEER

URS
27 HENRY ROAD
SUITE 500
VIRGINIA BEACH, VIRGINIA
(571) 494-4224
WWW.URSCORP.COM

CITY OF NORFOLK - DEPARTMENT OF PUBLIC WORKS
ELIZABETH RIVER TRAIL - PHASE IIIA

TREE PROTECTION
NOTES

NORFOLK, VIRGINIA

PROJECT REVISIONS:	DATE:
REVISED PER CITY COMMENTS DATED MARCH 2013	10/24/2013
REVISED PER CITY COMMENTS DATED DECEMBER 2013	12/2/2013

ISSUE DATE:
DECEMBER 2, 2012

SHEET
G3
SHEET 4 OF 15



DITCH SECTION - STA. 14+50 TO STA 16+76



OFFICE REVIEW SUMMARY			
PROJECT MANAGER:	SMB		
	<input type="checkbox"/> 35%	<input type="checkbox"/> 60%	<input type="checkbox"/> 90%
	<input type="checkbox"/> 100%		
PROJECT Q/A Q.C.:	SMB		
	<input type="checkbox"/> 35%	<input type="checkbox"/> 60%	<input type="checkbox"/> 90%
	<input type="checkbox"/> 100%		
PROJECT ENGINEER:	SMB		
	<input type="checkbox"/> 35%	<input type="checkbox"/> 60%	<input type="checkbox"/> 90%
	<input type="checkbox"/> 100%		
DRAFTSMAN:	WDS		



URS

277 BENDIX ROAD
SUITE 500
VIRGINIA BEACH, VIRGINIA
(757) 499-4224
WWW.URSCORP.COM

CITY OF NORFOLK - DEPARTMENT OF PUBLIC WORKS
ELIZABETH RIVER TRAIL - PHASE IIIA

MISCELLANEOUS DETAILS

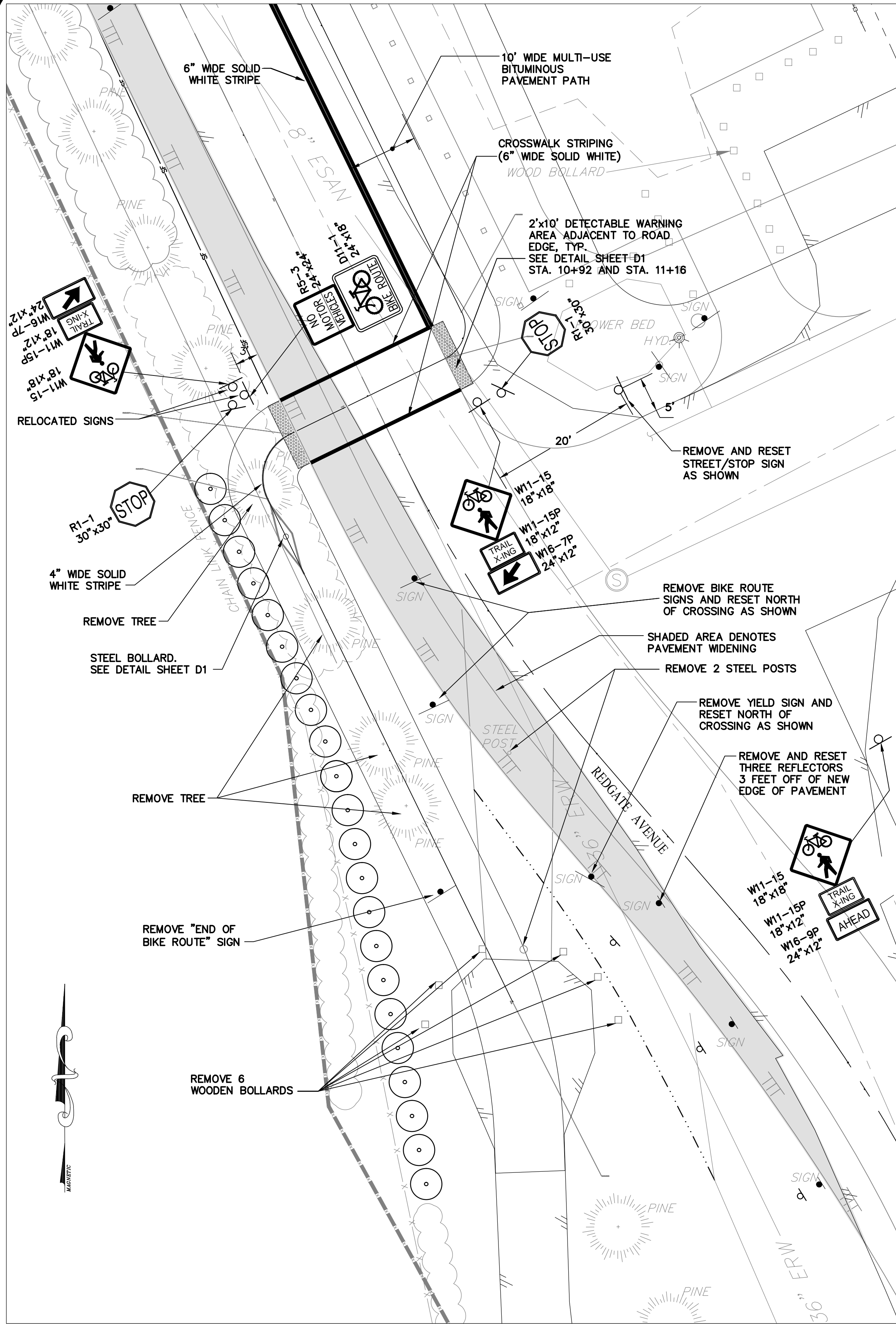
NORFOLK, VIRGINIA

City of Portland regularly updates its Title Data System and Copyright City's Inventory List	
PROJECT REVISIONS:	DATE:
REVISED PER CITY COMMENTS DATED DECEMBER 2013	12/27/2013
REVISED PER CITY COMMENTS DATED DECEMBER 2013	

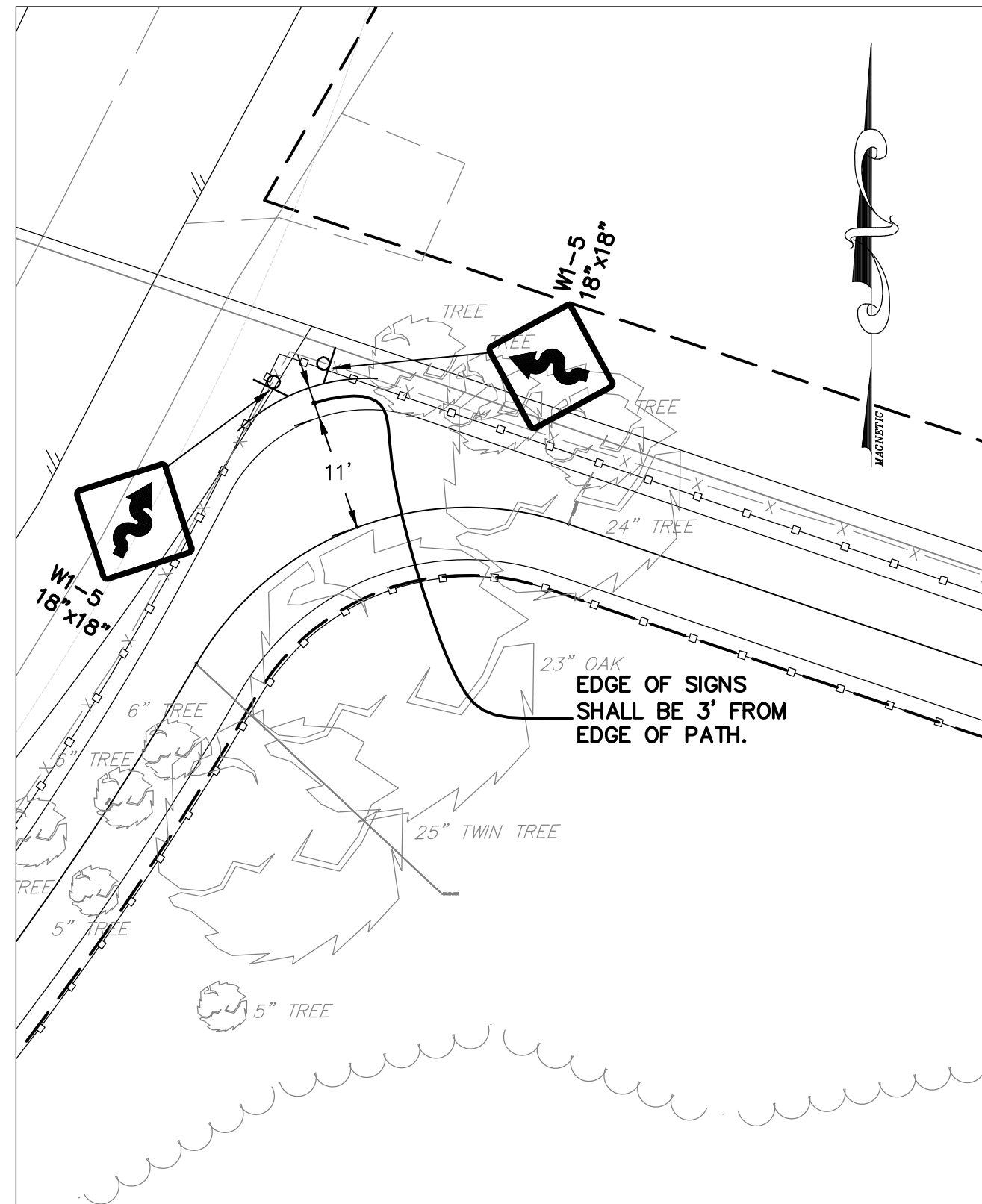
ISSUE DATE:
DECEMBER 2, 2012

SHEET
D1
SHEET 5 OF 15

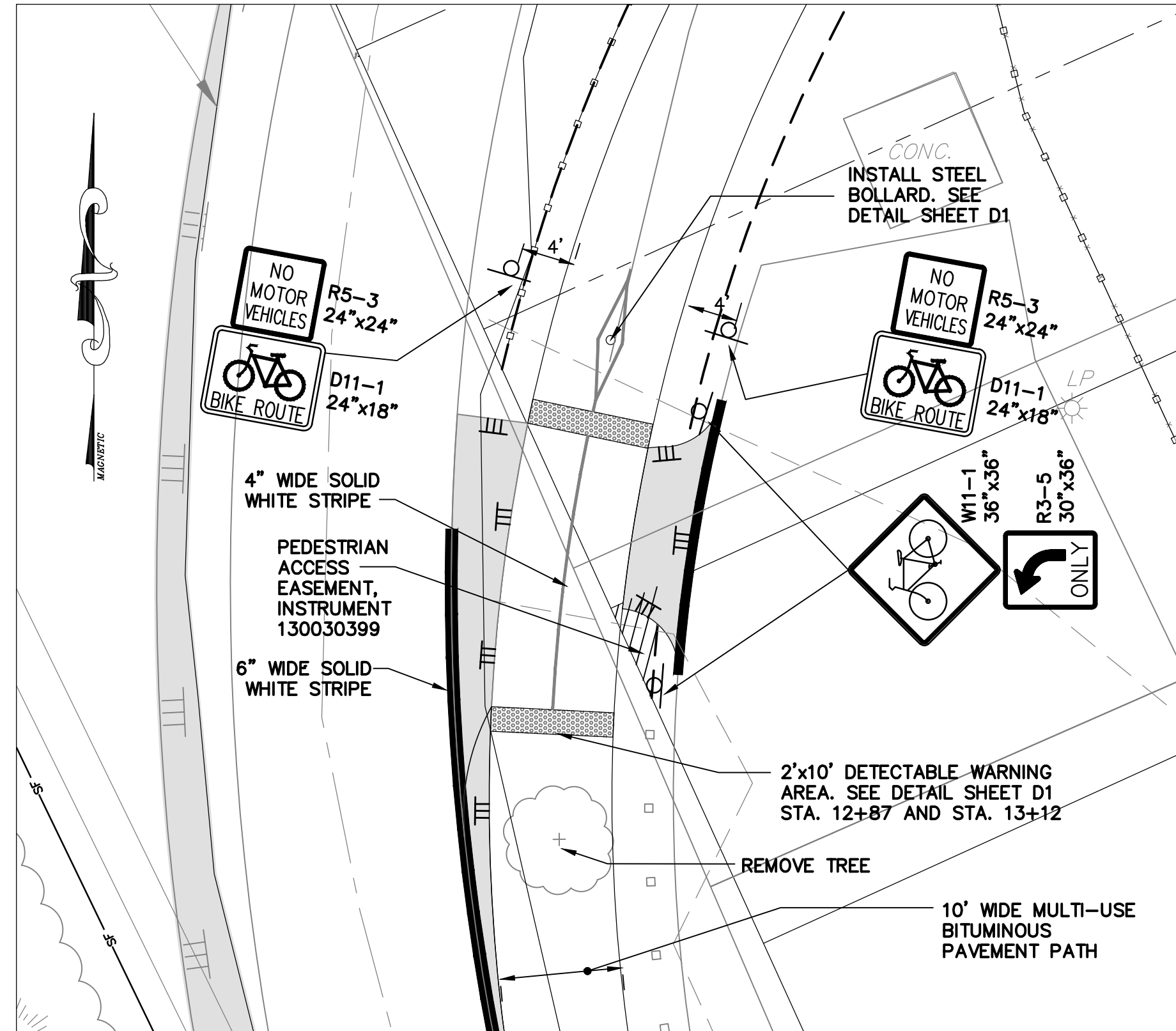
FILE NAME: U:\11655363 - Norfolk Parks\11655363 - Elizabeth River Trails\11655363 - Phase 3A\Coa\11655363_0500DTEL.dwg LAYOUT NAME: D2 PLOTTED: Thursday, December 12, 2013 - 4:56pm



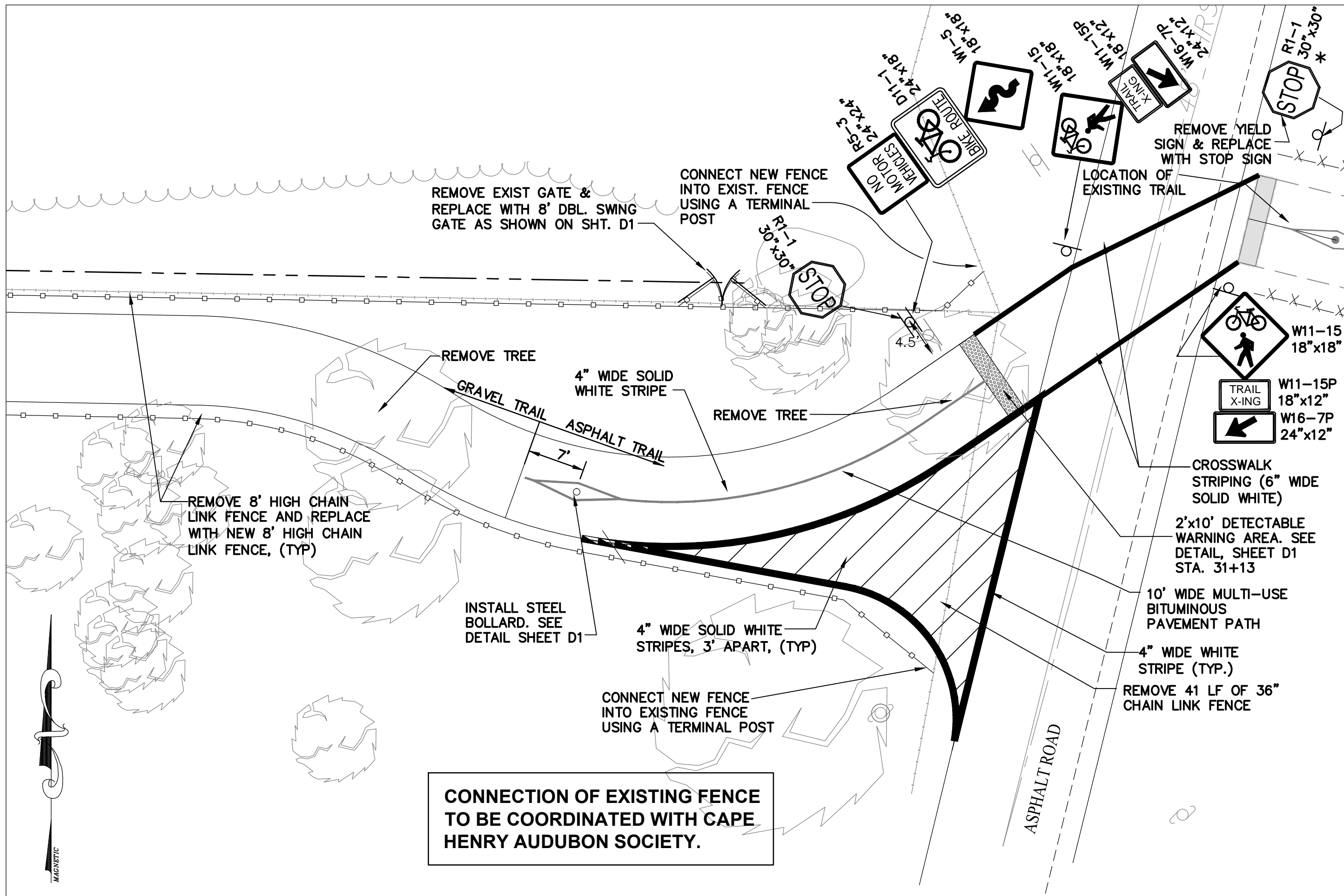
DETAIL A
SCALE: 1"=10'
EASEMENTS NOT SHOWN IN DETAIL ARE SHOWN IN SHEETS C1 THROUGH C3



DETAIL D
SCALE: 1"=10'
EASEMENTS NOT SHOWN IN DETAIL ARE SHOWN IN SHEETS C1 THROUGH C3

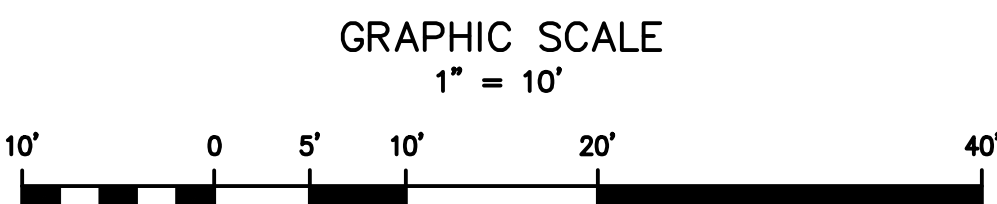


DETAIL B
SCALE: 1"=10'
EASEMENTS NOT SHOWN IN DETAIL ARE SHOWN IN SHEETS C1 THROUGH C3

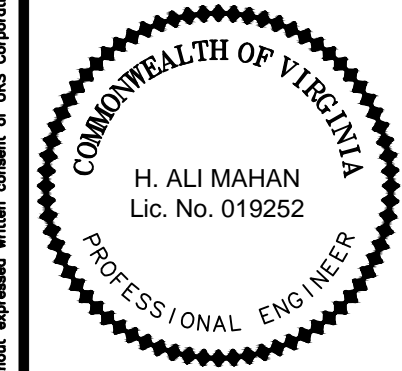


DETAIL C
SCALE: 1"=10'
EASEMENTS NOT SHOWN IN DETAIL ARE SHOWN IN SHEETS C1 THROUGH C3

* REMOVE EXISTING M5-1 (LEFT TURN ARROW) SIGN, 50' EAST OF EXISTING SIGNAL ALONG EXISTING BIKE PATH.
SIGN NUMBERS REFER TO THE FEDERAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.



OFFICE REVIEW SUMMARY			
PROJECT MANAGER: SMB	35%	60%	100%
PROJECT O.A.C. SMB	35%	60%	100%
PROJECT ENGINEER: SMB	35%	60%	100%
DRAFTSMAN: WDS	35%	60%	100%



URS
27 HENSON ROAD
SUITE 500
VIRGINIA BEACH, VIRGINIA
(757) 499-4224
WWW.URSCORP.COM

CITY OF NORFOLK - DEPARTMENT OF PUBLIC WORKS
ELIZABETH RIVER TRAIL - PHASE IIIA

PROJECT REVISIONS		DATE
REVISED PER CITY COMMENTS DATED MARCH 2013	10/24/2013	
REVISED PER CITY COMMENTS DATED DECEMBER 2013	12/2/2013	

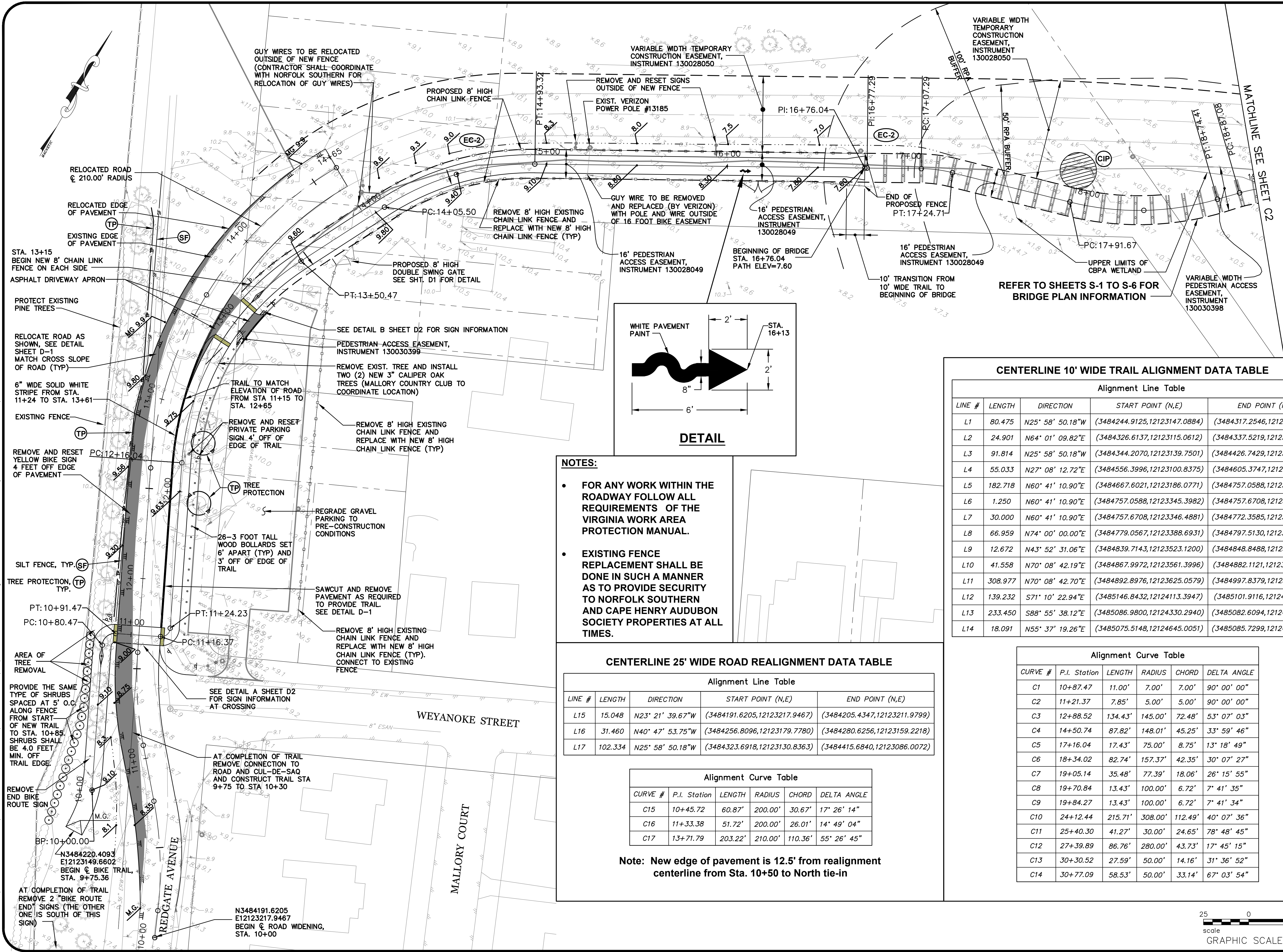
ISSUE DATE:
DECEMBER 2, 2012

SHEET
D2
SHEET 6 OF 15

SIGN SHEET

NORFOLK, VIRGINIA

FILE NAME: U:\1655940 - Norfolk Parks\1655940 - Elizabeth River Trail\1655940_001-003PH3A.dwg LAYOUT NAME: C1 PLOTTED: Thursday, December 12, 2013 - 4:57pm



- NOTES:**
- FOR ANY WORK WITHIN THE ROADWAY FOLLOW ALL REQUIREMENTS OF THE VIRGINIA WORK AREA PROTECTION MANUAL.
 - EXISTING FENCE REPLACEMENT SHALL BE DONE IN SUCH A MANNER AS TO PROVIDE SECURITY TO NORFOLK SOUTHERN AND CAPE HENRY AUDUBON SOCIETY PROPERTIES AT ALL TIMES.

CENTERLINE 25' WIDE ROAD REALIGNMENT DATA TABLE				
Alignment Line Table				
LINE #	LENGTH	DIRECTION	START POINT (N,E)	END POINT (N,E)
L15	15.048	N23° 21' 39.67"W	(3484191.6205,12123217.9467)	(3484205.4347,12123211.9799)
L16	31.460	N40° 47' 53.75"W	(3484256.8096,12123179.7780)	(3484280.6256,12123159.2218)
L17	102.334	N25° 58' 50.18"W	(3484323.6918,12123130.8363)	(3484415.6840,12123086.0072)

Alignment Curve Table					
CURVE #	P.I. Station	LENGTH	RADIUS	CHORD	DELTA ANGLE
C15	10+45.72	60.87'	200.00'	30.67'	17° 26' 14"
C16	11+33.38	51.72'	200.00'	26.01'	14° 49' 04"
C17	13+71.79	203.22'	210.00'	110.36'	55° 26' 45"

Note: New edge of pavement is 12.5' from realignment centerline from Sta. 10+50 to North tie-in

CENTERLINE 10' WIDE TRAIL ALIGNMENT DATA TABLE				
Alignment Line Table				
LINE #	LENGTH	DIRECTION	START POINT (N,E)	END POINT (N,E)
L1	80.475	N25° 58' 50.18"W	(3484244.9125,12123147.0884)	(3484317.2546,12123111.8351)
L2	24.901	N64° 01' 09.82"E	(3484326.6137,12123115.0612)	(3484337.5219,12123137.4457)
L3	91.814	N25° 58' 50.18"W	(3484344.2070,12123139.7501)	(3484426.7429,12123099.5292)
L4	55.033	N27° 08' 12.72"E	(3484556.3996,12123100.8375)	(3484605.3747,12123125.9391)
L5	182.718	N60° 41' 10.90"E	(3484667.6021,12123186.0771)	(3484757.0588,12123345.3982)
L6	1.250	N60° 41' 10.90"E	(3484757.0588,12123345.3982)	(3484757.6708,12123346.4881)
L7	30.000	N60° 41' 10.90"E	(3484757.6708,12123346.4881)	(3484772.3585,12123372.6467)
L8	66.959	N74° 00' 00.00"E	(3484779.0567,12123388.6931)	(3484797.5130,12123453.0578)
L9	12.672	N43° 52' 31.06"E	(3484839.7143,12123523.1200)	(3484848.8488,12123531.9028)
L10	41.558	N70° 08' 42.19"E	(3484867.9972,12123561.3996)	(3484882.1121,12123600.4875)
L11	308.977	N70° 08' 42.70"E	(3484892.8976,12123625.0579)	(3484997.8379,12123915.6683)
L12	139.232	S71° 10' 22.94"E	(3485146.8432,12124113.3947)	(3485101.9116,12124245.1770)
L13	233.450	S88° 55' 38.12"E	(3485086.9800,12124330.2940)	(3485082.6094,12124563.7036)
L14	18.091	N55° 37' 19.26"E	(3485075.5148,12124645.0051)	(3485085.7299,12124659.9362)

Alignment Curve Table					
CURVE #	P.I. Station	LENGTH	RADIUS	CHORD	DELTA ANGLE
C1	10+87.47	11.00'	7.00'	7.00'	90° 00' 00"
C2	11+21.37	7.85'	5.00'	5.00'	90° 00' 00"
C3	12+88.52	134.43'	145.00'	72.48'	53° 07' 03"
C4	14+50.74	87.82'	148.01'	45.25'	33° 59' 46"
C5	17+16.04	17.43'	75.00'	8.75'	13° 18' 49"
C6	18+34.02	82.74'	157.37'	42.35'	30° 07' 27"
C7	19+05.14	35.48'	77.39'	18.06'	26° 15' 55"
C8	19+70.84	13.43'	100.00'	6.72'	7° 41' 35"
C9	19+84.27	13.43'	100.00'	6.72'	7° 41' 34"
C10	24+12.44	215.71'	308.00'	112.49'	40° 07' 36"
C11	25+40.30	41.27'	30.00'	24.65'	78° 48' 45"
C12	27+39.89	86.76'	280.00'	43.73'	17° 45' 15"
C13	30+30.52	27.59'	50.00'	14.16'	31° 36' 52"
C14	30+77.09	58.53'	50.00'	33.14'	67° 03' 54"



OFFICE REVIEW SUMMARY

PROJECT MANAGER: SMB	100%
PROJECT O.A.C.: SMB	100%
PROJECT ENGINEER: SMB	100%
DRAFTSMAN: WDS	100%

COMMONWEALTH OF VIRGINIA

H. ALI MAHAN
Lic. No. 019252

PROFESSIONAL ENGINEER

URS

27 HENDON ROAD
VIRGINIA BEACH, VIRGINIA
(757) 499-4224
WWW.URSCORP.COM

CITY OF NORFOLK - DEPARTMENT OF PUBLIC WORKS
ELIZABETH RIVER TRAIL - PHASE IIIA

SITE PLAN

NORFOLK, VIRGINIA

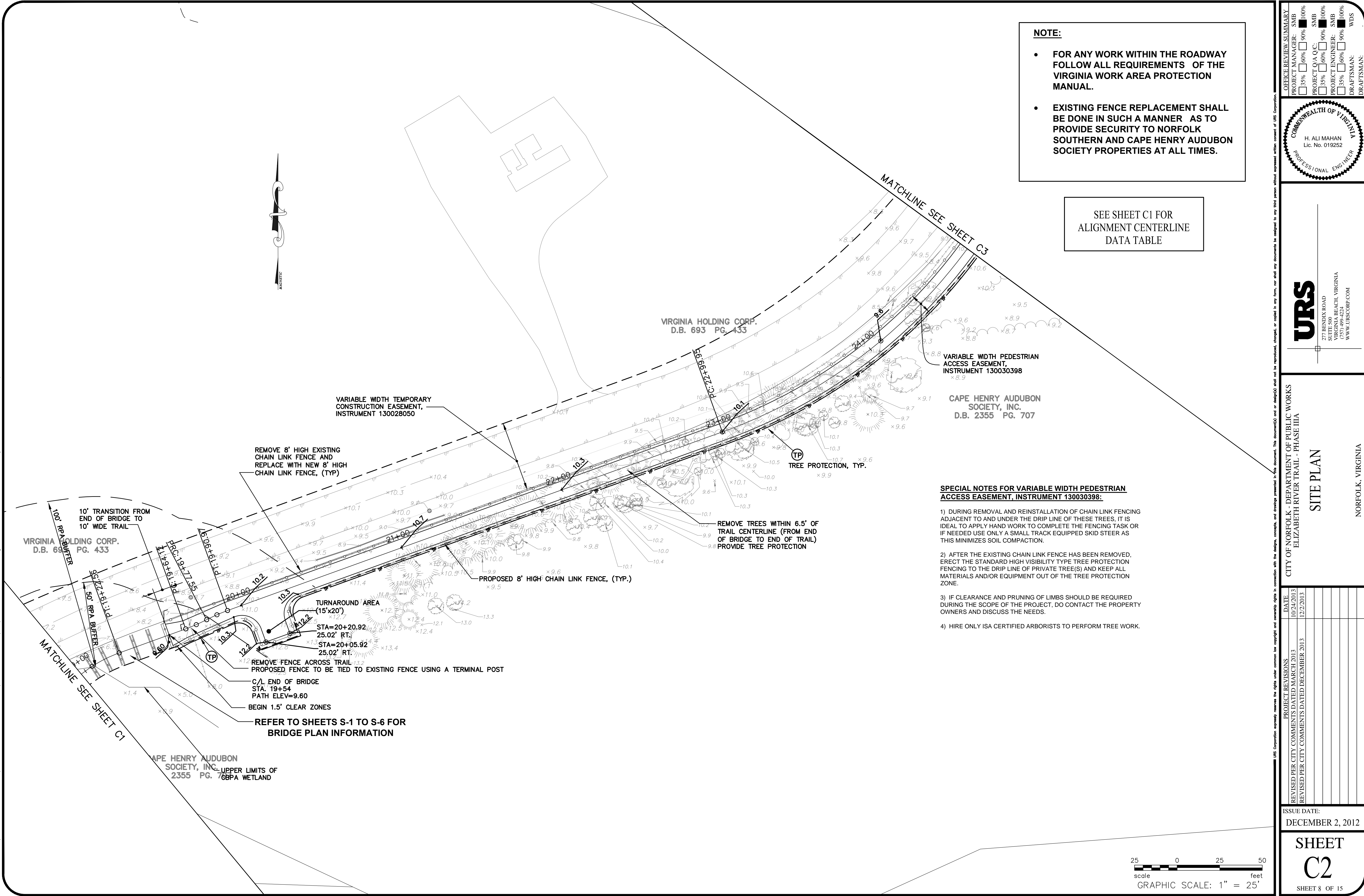
PROJECT REVISIONS

DATE	REVISION
10/24/2013	PROJECT REVISIONS
12/2/2013	REVISED PER CITY COMMENTS DATED MARCH 2013
	REVISED PER CITY COMMENTS DATED DECEMBER 2013

ISSUE DATE:
DECEMBER 2, 2012

SHEET
C1

SHEET 7 OF 15



NOTE:

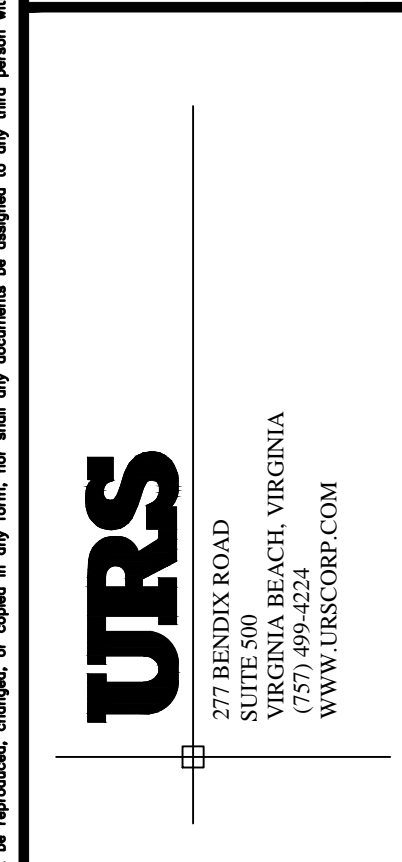
- **FOR ANY WORK WITHIN THE ROADWAY FOLLOW ALL REQUIREMENTS OF THE VIRGINIA WORK AREA PROTECTION MANUAL.**
- **EXISTING FENCE REPLACEMENT SHALL BE DONE IN SUCH A MANNER AS TO PROVIDE SECURITY TO NORFOLK SOUTHERN AND CAPE HENRY AUDUBON SOCIETY PROPERTIES AT ALL TIMES.**

SEE SHEET C1 FOR
ALIGNMENT CENTERLINE
DATA TABLE

**SPECIAL NOTES FOR VARIABLE WIDTH PEDESTRIAN
ACCESS EASEMENT, INSTRUMENT 130030398:**

- 1) DURING REMOVAL AND REINSTALLATION OF CHAIN LINK FENCING ADJACENT TO AND UNDER THE DRIP LINE OF THESE TREES, IT IS IDEAL TO APPLY HAND WORK TO COMPLETE THE FENCING TASK OR IF NEEDED USE ONLY A SMALL TRACK EQUIPPED SKID STEER AS THIS MINIMIZES SOIL COMPACTION.
- 2) AFTER THE EXISTING CHAIN LINK FENCE HAS BEEN REMOVED, ERECT THE STANDARD HIGH VISIBILITY TYPE TREE PROTECTION FENCING TO THE DRIP LINE OF PRIVATE TREE(S) AND KEEP ALL MATERIALS AND/OR EQUIPMENT OUT OF THE TREE PROTECTION ZONE.
- 3) IF CLEARANCE AND PRUNING OF LIMBS SHOULD BE REQUIRED DURING THE SCOPE OF THE PROJECT, DO CONTACT THE PROPERTY OWNERS AND DISCUSS THE NEEDS.
- 4) HIRE ONLY ISA CERTIFIED ARBORISTS TO PERFORM TREE WORK.

OFFICE REVIEW SUMMARY		
PROJECT MANAGER:	SMB	100%
	<input type="checkbox"/> 35% <input type="checkbox"/> 60% <input type="checkbox"/> 90% <input checked="" type="checkbox"/> 100%	
PROJECT Q/A Q.C:	SMB	100%
	<input type="checkbox"/> 35% <input type="checkbox"/> 60% <input type="checkbox"/> 90% <input checked="" type="checkbox"/> 100%	
PROJECT ENGINEER:	SMB	100%
	<input type="checkbox"/> 35% <input type="checkbox"/> 60% <input type="checkbox"/> 90% <input checked="" type="checkbox"/> 100%	
DRAFTSMAN:	WDS	



CITY OF NORFOLK - DEPARTMENT OF PUBLIC WORKS
ELIZABETH RIVER TRAIL - PHASE IIIA

SITE PLAN

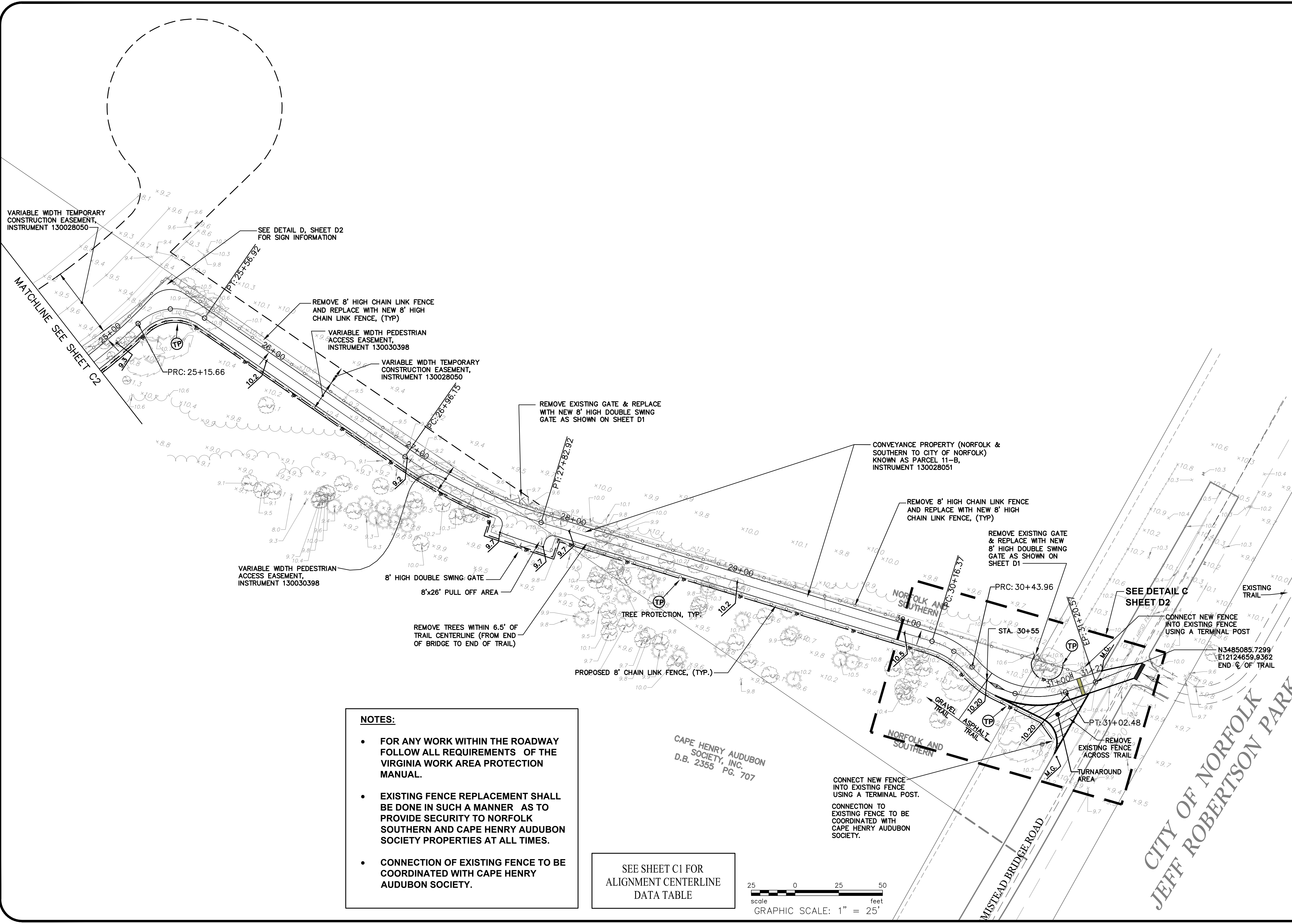
NORFOLK, VIRGINIA

[illegible]

ISSUE DATE:
DECEMBER 2, 2012

SHEET
C2
SHEET 8 OF 15

FILE NAME: U:\11655363 - Norfolk Parks\11655363 - Elizabeth River Trails\11655363 - Elizabeth River Trails\11655363.dwg LAYOUT NAME: C3 PLOTTED: Thursday, December 12, 2013 - 5:16pm



NOTES:

- FOR ANY WORK WITHIN THE ROADWAY FOLLOW ALL REQUIREMENTS OF THE VIRGINIA WORK AREA PROTECTION MANUAL.
- EXISTING FENCE REPLACEMENT SHALL BE DONE IN SUCH A MANNER AS TO PROVIDE SECURITY TO NORFOLK SOUTHERN AND CAPE HENRY AUDUBON SOCIETY PROPERTIES AT ALL TIMES.
- CONNECTION OF EXISTING FENCE TO BE COORDINATED WITH CAPE HENRY AUDUBON SOCIETY.

SEE SHEET C1 FOR
ALIGNMENT CENTERLINE
DATA TABLE



OFFICE REVIEW SUMMARY

PROJECT MANAGER: SMB
35% 60% 90% 100%
PROJECT O.A.C.: SMB
35% 60% 90% 100%
PROJECT ENGINEER: SMB
35% 60% 90% 100%
DRAFTSMAN: WDS

COMMONWEALTH OF VIRGINIA

H. ALI MAHAN
Lic. No. 019252

PROFESSIONAL ENGINEER

URS

27 HENSON ROAD
VIRGINIA BEACH, VIRGINIA
(757) 499-4224
WWW.URSCORP.COM

CITY OF NORFOLK - DEPARTMENT OF PUBLIC WORKS
ELIZABETH RIVER TRAIL - PHASE IIIA

SITE PLAN

NORFOLK, VIRGINIA

DATE	REVISIONS
10/24/2013	PROJECT REVISIONS
12/2/2013	REVISED PER CITY COMMENTS DATED MARCH 2013
	REVISED PER CITY COMMENTS DATED DECEMBER 2013

ISSUE DATE:
DECEMBER 2, 2012

SHEET
C3
SHEET 9 OF 15

GENERAL NOTES:

1. THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE PROVISIONS OF THE VIRGINIA UNIFORM STATEWIDE BUILDING CODE (2006 INTERNATIONAL BUILDING CODE WITH VIRGINIA AMENDMENTS), AS EFFECTIVE MAY 1, 2008 AND AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES WITH VDOT MODIFICATIONS.
2. DESIGN LOADS USED IN THE DESIGN OF THIS STRUCTURE ARE AS FOLLOWS:

DECK LIVE LOAD	100 PSF
MAINTENANCE VEHICLE	10,000 LBS
WIND DESIGN DATA	50 PSF
3. THE CONTRACTOR SHALL COORDINATE AND VERIFY ALL DIMENSIONS PRIOR TO STARTING CONSTRUCTION AND ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL FROM THE SITE AND LEGAL DISPOSAL OF DEBRIS GENERATED AS A RESULT OF DEMOLITION AND/ OR CONSTRUCTION ACTIVITIES.
5. THE LOCATION OF EXISTING UTILITIES AND OTHER STRUCTURES ACROSS, UNDERNEATH, OR OTHERWISE ALONG THE LINE OF PROPOSED WORK ARE NOT NECESSARILY SHOWN ON THE PLANS. REFER TO CIVIL DRAWINGS. A MINIMUM OF 72 HOURS PRIOR TO EXCAVATING, "MISS UTILITY" OF VIRGINIA (811) MUST BE CONTACTED.
6. GUARD DESIGNED AS A PEDESTRIAN/ BICYCLE GUARD ONLY AS PER DIRECTION FROM THE OWNER. GUARD IS NOT CRASH RATED AND IS NOT INTENDED AS A VEHICULAR RAILING.
7. ALL MISCELLANEOUS STEEL INCLUDING PLATE AND CONNECTORS SHALL BE GALVANIZED. ALL BOLTS SHALL BE ASTM A307, GALVANIZED. NAILS AND SCREWS SHALL BE GALVANIZED. GALVANIZING SHALL BE HOT-DIPPED IN ACCORDANCE WITH ASTM A123.
8. ALL EXPOSED BOLT ENDS, NUTS AND WASHERS SHALL BE COUNTERBORED (EXPANSION BIT OR HOLE SAW ONLY) WHERE POSSIBLE CONTACT WITH HUMANS MAY OCCUR.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED LICENSES AT HIS EXPENSE AND SHALL WORK WITH OWNER TO COORDINATE INSPECTION OF WORK BY ENGINEER. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING REQUIRED CITY INSPECTIONS.
10. THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AND BRACING REQUIRED TO ERECT AND HOLD THE STRUCTURE IN PROPER ALIGNMENT UNTIL PERMANENT SUPPORTS AND LATERAL BRACING ARE IN PLACE.

STEEL NOTES

1. STRUCTURAL STEEL FOR THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION, ALLOWABLE STRESS DESIGN".
2. ALL STRUCTURAL STEEL & MISCELLANEOUS STEEL SHALL BE HOT DIPPED GALVANIZED.

CONCRETE NOTES

1. CAST-IN-PLACE CONCRETE FOR THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE (ACI) "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318) AND COMMENTARY (ACI 318R)".
2. CONCRETE SHALL BE NORMAL WEIGHT AND SHALL OBTAIN 28 DAY COMPRESSIVE STRENGTHS OF 4,000 PSI.
3. ALL REINFORCING STEEL AND EMBEDDED ITEMS SHALL BE ACCURATELY PLACED IN THE POSITIONS SHOWN AND ADEQUATELY TIED AND SUPPORTED BEFORE CONCRETE IS PLACED TO PREVENT DISPLACEMENT BEYOND PERMITTED TOLERANCES.
4. MINIMUM CONCRETE COVER FOR REINFORCING STEEL AS INDICATED ON THE DRAWINGS SHALL GOVERN WHEN IN CONFLICT WITH ACI 318.
5. REINFORCING BARS SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED.
6. REINFORCING MATERIALS SHALL BE EPOXY COATED.

TIMBER NOTES

1. ALL STRUCTURAL LUMBER AND TIMBER SHALL BE PLANT CERTIFIED AND GRADED IN ACCORDANCE WITH SOUTHERN PINE INSPECTION BUREAU RULES AND SHALL BE NO. 2 OR BETTER SOUTHERN PINE, KD USED AT 19% MAXIMUM MOISTURE CONTENT. TIMBER GRADES SHALL CONFORM TO THE FOLLOWING:

PILE CLAMPS	#2	SOUTHERN PINE
STRINGERS	#2	SOUTHERN PINE
BRACES & MISC LUMBER	#2	SOUTHERN PINE
DECK BOARDS	#1	SOUTHERN PINE
GUARDS, POSTS	#1	SOUTHERN PINE
RAILS & BALUSTERS	#1	SOUTHERN PINE

MATERIAL FOR BELOW DECK STRUCTURAL LUMBER (PILE CAPS AND STRINGERS) SHALL BE TREATED TO A RETENTION OF 2.5 LB/CF OF COPPER CHROMATED ARSENATE (CCA TYPE C). DECKING AND RAILING SHALL BE TREATED TO A RETENTION OF 0.40 POUNDS PER CUBIC FOOT ALKALINE COPPER QUAT, (ACQ TYPE C), OR A RETENTION OF 0.20 POUNDS PER CUBIC FOOT COPPER AZOLE TYPE B, (CA-B) OR EQUIVALENT WOOD TREATMENT PROCESS APPROVED BY THE OWNER IN ACCORDANCE WITH THE AMERICAN WOOD PRESERVERS ASSOCIATION STANDARDS UC 4A. ALL HARDWARE SHALL BE COMPATIBLE WITH WOOD TREATMENTS USED.

PROVIDE SURFACED FOUR SIDES MATERIAL WHERE HUMAN CONTACT WITH THE WOODWORK IS POSSIBLE. STRINGERS AND PILE CAP MAY BE SURFACED 2 SIDES (TOP & BOTTOM)

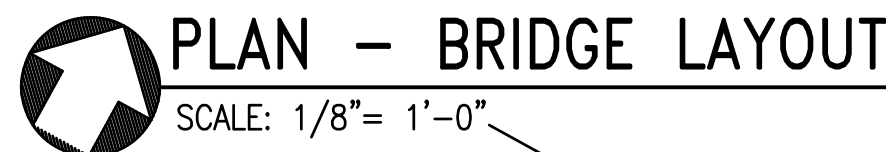
PROVIDE EASED EDGES AND CORNERS ON TIMBER FOR DECKING, EDGE PROTECTION, GUARDS, BALUSTERS, RAILINGS AND OTHER WOODWORK WHERE HUMAN CONTACT WITH THE WOODWORK IS POSSIBLE.

2. TIMBER PILES SHALL BE IN ACCORDANCE WITH ASTM D25 AND PRESSURE TREATED TO A RETENTION OF 2.5 LB/CF OF COPPER CHROMATED ARSENATE (CCA TYPE C) IN ACCORDANCE WITH AWPA C3, WITH WATER BORNE PRESERVATIVE. MINIMUM PILE BUTT CIRCUMFERENCE MEASURED AT 3 FEET FROM THE BUTT END SHALL BE 38 INCHES. ESTIMATED TIP ELEVATION OF PRODUCTION PILES IS -35.00. TEST PILES SHALL BE DRIVEN TO A TIP ELEVATION OF -35.00 FEET AND SHALL HAVE SUFFICIENT LENGTH TO BE DRIVEN TO A TIP ELEVATION OF -40.00. DRIVE TO BEYOND -35.00 WHEN DIRECTED BY OWNER. INDICATOR (TEST) PILES SHALL BE 5' LONGER THAN ESTIMATED LENGTH OF PRODUCTION PILES. PRODUCTION PILE LENGTH IS SUBJECT TO ADJUSTMENT BASED ON THE RESULTS OF THE TEST PILE PROGRAM.
3. JETTING OR SPUDDING OF PILES WILL NOT BE ALLOWED UNLESS APPROVED IN WRITING BY THE OWNER.
4. TIMBER PILES SHALL ACHIEVE A MINIMUM SAFE BEARING CAPACITY OF 20 TONS.

ABBREVIATIONS

ADA	AMERICAN DISABILITIES ACT	MIN	MINIMUM
APPROX	APPROXIMATE	MPH	MILES PER HOUR
CLR	CLEAR	NIC	NOT IN CONTRACT
CONC	CONCRETE	OC	ON CENTER
CONST	CONSTRUCTION	O/C	ON CENTER
CONT	CONTINUOUS	OD	OUTSIDE DIAMETER
DIA	DIAMETER	PSF	POUNDS PER SQUARE FOOT
EA	EACH	REQ'D	REQUIRED
EJ	EXPANSION JOINT	SEC	SECOND
ELEV	ELEVATION	SIM	SIMILAR
EL	ELEVATION	SLV	SHORT LEG VERTICAL
EXIST	EXISTING	SS	STAINLESS STEEL
GA	GAUGE	STD	STANDARD
GALV	GALVANIZED	T&B	TOP AND BOTTOM
LF	LINEAR FOOT	TOS	TOP OF STEEL
MAX	MAXIMUM	TP	TYPICAL
MG	MATCH GRADE		TEST (INDICATOR) PILE

<h1 style="margin: 0;">LIBERTY ENGINEERING, P.C.</h1> <p style="font-size: small; margin-top: 10px;">4521 E Honeygrove Rd #108 Virginia Beach, VA 23465</p> <p style="font-size: x-small; margin-top: 5px;">Phone: (757) 499-2791 Fax: (757) 495-7984</p>		<h1 style="margin: 0;">STRUCTURAL ENGINEERING</h1>																																										
<small>URS Corporation hereby warrants the rights under certain law copyright and ownership in this document. This document(s) used or displayed shall not be reproduced, changed, or copied in any form, nor sold or any documents be assigned to any third person without expressed written consent of URS Corporation.</small>																																												
<p>NORFOLK PUBLIC WORKS DEPARTMENT</p> <p>ELIZABETH RIVER TRAIL - PHASE IIA</p>		<p>DATE:</p>																																										
<p>PROJECT REVISIONS</p> <table border="1" style="width: 100%; height: 150px; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">#</th> <th style="width: 85%;">DESCRIPTION</th> <th style="width: 10%;">DATE</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>		#	DESCRIPTION	DATE																															<p>OFFICE REVIEW SUMMARY</p> <table style="width: 100%; font-size: x-small;"> <tr> <td>PROJECT MANAGER: JMH</td> <td><input checked="" type="checkbox"/> 35% <input type="checkbox"/> 60% <input checked="" type="checkbox"/> 90% <input type="checkbox"/> 100%</td> </tr> <tr> <td>PROJECT Q.A.Q.C.: JMH</td> <td><input checked="" type="checkbox"/> 35% <input type="checkbox"/> 60% <input checked="" type="checkbox"/> 90% <input type="checkbox"/> 100%</td> </tr> <tr> <td>PROJECT ENGINEER: CLM</td> <td><input checked="" type="checkbox"/> 35% <input type="checkbox"/> 60% <input checked="" type="checkbox"/> 90% <input type="checkbox"/> 100%</td> </tr> <tr> <td>DRAFTSMAN: JDH</td> <td><input checked="" type="checkbox"/> 35% <input type="checkbox"/> 60% <input checked="" type="checkbox"/> 90% <input type="checkbox"/> 100%</td> </tr> </table> <p>DRAFTSMAN:</p>		PROJECT MANAGER: JMH	<input checked="" type="checkbox"/> 35% <input type="checkbox"/> 60% <input checked="" type="checkbox"/> 90% <input type="checkbox"/> 100%	PROJECT Q.A.Q.C.: JMH	<input checked="" type="checkbox"/> 35% <input type="checkbox"/> 60% <input checked="" type="checkbox"/> 90% <input type="checkbox"/> 100%	PROJECT ENGINEER: CLM	<input checked="" type="checkbox"/> 35% <input type="checkbox"/> 60% <input checked="" type="checkbox"/> 90% <input type="checkbox"/> 100%	DRAFTSMAN: JDH	<input checked="" type="checkbox"/> 35% <input type="checkbox"/> 60% <input checked="" type="checkbox"/> 90% <input type="checkbox"/> 100%
#	DESCRIPTION	DATE																																										
PROJECT MANAGER: JMH	<input checked="" type="checkbox"/> 35% <input type="checkbox"/> 60% <input checked="" type="checkbox"/> 90% <input type="checkbox"/> 100%																																											
PROJECT Q.A.Q.C.: JMH	<input checked="" type="checkbox"/> 35% <input type="checkbox"/> 60% <input checked="" type="checkbox"/> 90% <input type="checkbox"/> 100%																																											
PROJECT ENGINEER: CLM	<input checked="" type="checkbox"/> 35% <input type="checkbox"/> 60% <input checked="" type="checkbox"/> 90% <input type="checkbox"/> 100%																																											
DRAFTSMAN: JDH	<input checked="" type="checkbox"/> 35% <input type="checkbox"/> 60% <input checked="" type="checkbox"/> 90% <input type="checkbox"/> 100%																																											
 277 HENSON ROAD SUITE 500 VIRGINIA BEACH, VIRGINIA (757) 499-4224 WWW.URSCORP.COM																																												
<h2 style="margin: 0;">STRUCTURAL NOTES</h2>		<p>NORFOLK, VIRGINIA</p>																																										
<p>SHEET</p> <h1 style="margin: 0;">S-1</h1> <p>SHEET 10 OF 15</p>																																												



PROVIDE 3X8 CROSS BRACES
BENTS (7) TO (26)

4521 E Honeygrove Rd #108
Virginia Beach, VA 23455

Phone: (757) 499-2791
Fax: (757) 499-7984

STRUCTURAL ENGINEERING

and person without expressed written consent of URS Corporation.

COMMONWEALTH OF VIRGINIA
Garold L. Moore
GAROLD L. MOORE
Lic. No. 17663
10-03-11
PROFESSIONAL ENGINEER



URS
277 BENDIX ROAD
SUITE 500
VIRGINIA BEACH, VIRGINIA
(757) 499-4224
WWW.URSCORP.COM

NORFOLK PUBLIC WORKS DEPARTMENT
ELIZABETH RIVER TRAIL - PHASE IIIA

PLAN - BRIDGE LAYOUT

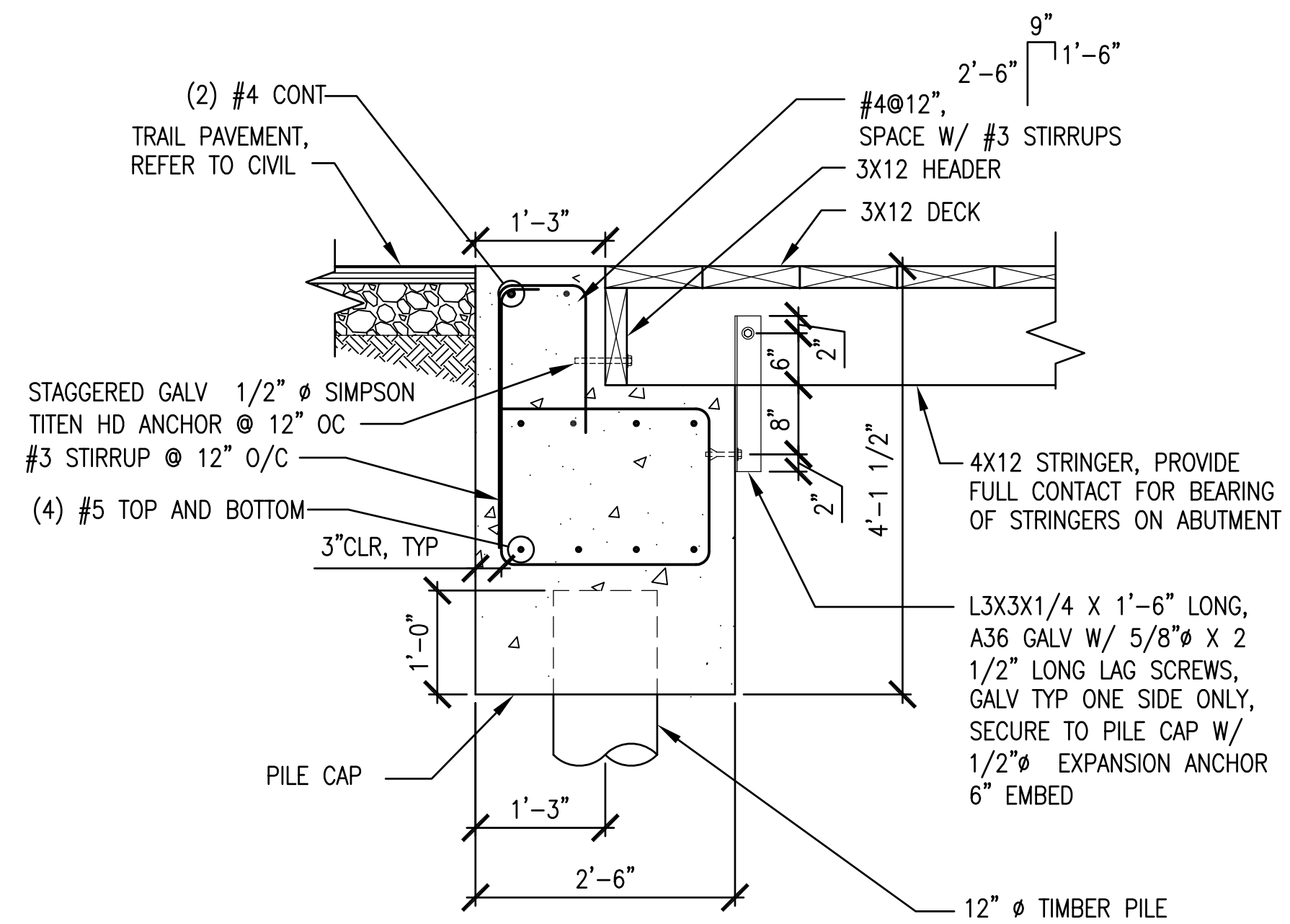
NORFOLK, VIRGINIA

[illegible]

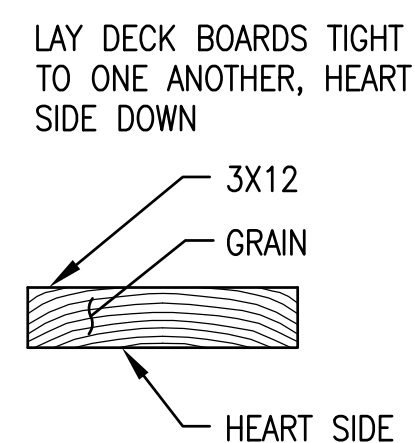
ISSUE DATE:
10-03-2011

SHEET
S-2

SHEET 11 OF 15



5 SECTION
S5 S5 SCALE: 3/4" = 1'-0"



1 3- 3X12 EACH RIPPED FOR CHANGE IN DIRECTION,
TYPICAL @ CORNERS.


2 5 - 3X12 @ 11 1/4", TYPICAL BETWEEN CORNERS.

4521 E Honeygrove Rd #108
Virginia Beach, VA 23455

Phone: (757) 499-2791
Fax: (757) 499-7984

STRUCTURAL ENGINEERING

and person without expressed written consent of IBS Commission

	OFFICE REVIEW SUMMARY			
	PROJECT MANAGER:	JMH		
		35%	60%	90%
	PROJECT Q.A./C:	JMH		
		35%	60%	90%
	PROJECT ENGINEER:	GLM		
	35%	60%	90%	
	DRAFTSMAN: JDH			

URS

277 BENDIX ROAD
SUITE 500
BEACH, VIRGINIA
(571) 499-1224
WWW.URSCORP.COM

NORFOLK PUBLIC WORKS DEPARTMENT
ELIZABETH RIVER TRAIL - PHASE IIIA

SECTION AND DETAILS

--	--	--	--	--	--

ISSUE DATE:
10-03-2011

SHEET
S-5
SHEET 14 OF 15

NORFOLK, VIRGINIA

